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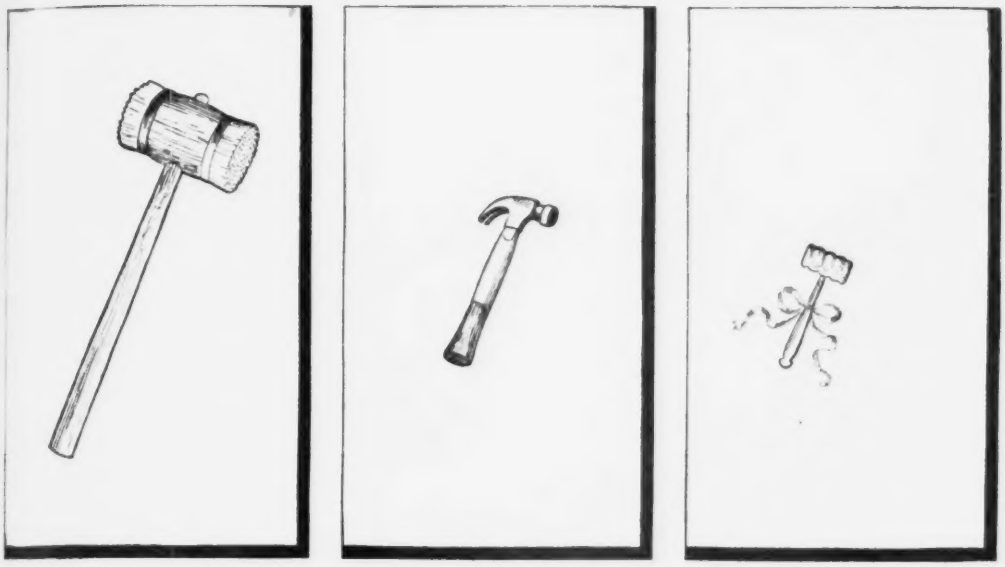

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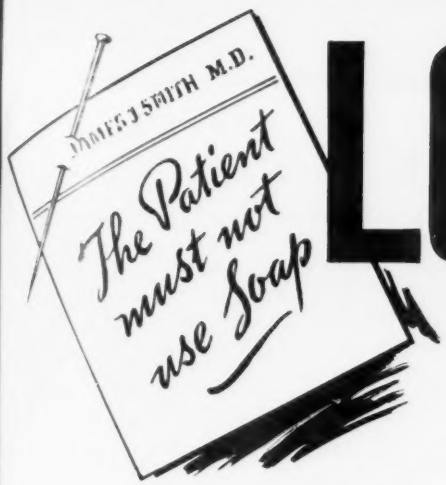

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VOLUME 49 MARCH 1944 NUMBER 3

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XERODERMA PIGMENTOSUM

REPORT OF A CASE AND CONSIDERATION OF INCOMPLETE SEX LINKAGE IN INHERITANCE OF THE DISEASE

MADGE THURLOW MACKLIN, M.D.

LONDON, ONTARIO, CANADA

Haldane has described a method of inheritance which he has called incomplete sex linkage, in contrast to the mode of inheritance exhibited by hemophilia, for example, which is said to be fully sex linked. Xeroderma pigmentosum is one of the diseases said by Haldane to show incomplete sex linkage.

An examination of the mode of transmission of traits dependent on (1) a recessive gene, (2) a sex-linked recessive gene, (3) a gene carried in the Y chromosome and (4) an incompletely sex-linked recessive gene will make the matter clear.

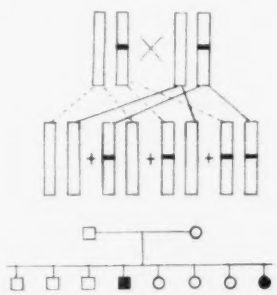

Chart 1.—This represents a mating between two normal parents, each carrying latent a gene responsible for a defect, here shown as a black bar. The gene is present in the autosomes; hence both parents have chromosomes that are similar. Only when the black bars are present in both chromosomes of a pair is the defect evident. The four possible recombinations of these parental chromosomes are shown in the second line. The lower part of the figure represents a theoretic pedigree in which the parents have 4 sons and 4 daughters, with 1 of each sex affected. For fuller explanation of all of these figures, see the text.

TRAITS DEPENDENT ON RECESSIVE GENES

The mode of inheritance of any trait dependent on a recessive gene not carried in the sex chromosomes is presented in chart 1. Both parents are normal but carry latent a gene for the trait in question. The pair of chromosomes carrying this gene is represented in the chart, all other chromosomes being ignored. The chromosomal pairs of both parents are alike, since these are autosomes, not sex chromosomes. Being dependent on a recessive gene, this trait becomes evident only when both chromosomes of a pair bear the gene for the defect, here represented as a black bar. The characteristics of a trait dependent on a recessive gene are: 1. It may appear in offspring whose parents do not show the trait in question. 2. If the trait is rare, there is a higher incidence of consanguineous matings among the parents of the offspring with the trait than is common in the general population. 3. The trait may appear in both sexes equally. 4. It may appear in both sexes in the same family.

The upper part of chart 1 shows the pair of chromosomes of each parent concerned with the inheritance of the trait in question; each parent has a gene determining the trait in one chromosome. The four possible combinations of these chromosomes in the offspring are shown in the second line, the possibilities being as follows: One pair lacks the black bar; two pairs possess one clear and one barred chromosome, and one pair has both chromosomes barred. The lower part of the figure is a theoretic pedigree done in the conventional method to illustrate the upper part of the figure. Eight children in place of four have been shown, four boys and four girls, because the expectation is that one fourth of the children will be affected with the trait and that both sexes are equally affected. This requires a total of eight to show all possibilities.

TRAITS DEPENDENT ON SEX-LINKED RECESSIVE GENES

Chart 2 (*A* and *B*) represents the mode of inheritance of a trait such as hemophilia or red-green color blindness. This trait is carried in the sex chromosomes, of which the female has

From the Medical School, University of Western Ontario.

This paper was presented before the Royal Society of Canada, May 29, 1942, at Toronto, Ontario, under the sponsorship of Prof. C. C. Macklin, F.R.S.C., to whom I express my sincere thanks.

two of a pair alike in size, here called XX, and the male has one member of the pair smaller than the other; they are here called XY. It will be noted that the Y chromosome has a segment for which there is no homologous part in the X chromosome, and the reverse is true also, namely, the X chromosome has a segment for which there is no homologous part in the Y chromosome. In charts 2 to 6 inclusive, the nonhomologous segment of the Y chromosome has been set above the level of the X chromosome in order to simplify the pictorial representation. As a matter of fact, the nonhomologous part of the Y chromosome is said to be opposite the nonhomologous part of the X chromosome as shown in chart 7, in which it has been cross

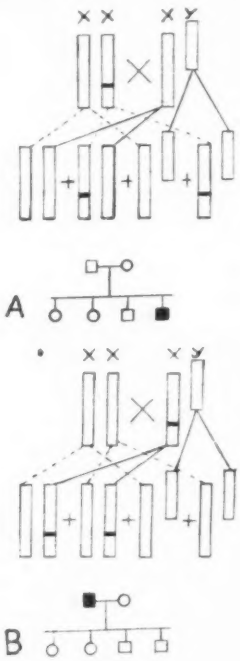

Chart 2.—*A* shows pairs of chromosomes connected with sex and bearing the gene for hemophilia. The sex chromosomes of the mother are represented by the two rectangles of the same size, one of which carries the gene for hemophilia. The sex chromosomes of the father are represented by the two rectangles of unequal size, each of which has a section not homologous with a corresponding section of the other chromosome and a section homologous with one in the other chromosome of the pair. The two similar chromosomes in the mother and the one of the same size in the father are designated as X chromosomes; the shorter one in the father is the Y chromosome.

The mother, a carrier of the gene for hemophilia, transmits it to half her daughters and to half her sons. The lower figure is a pedigree illustrative of this type of mating.

B shows a mating between a wholly normal woman and a man with hemophilia. All the daughters receive the chromosome with the gene for the defect, whereas the sons receive only normal chromosomes from both parents. The lower figure shows a pedigree representing this mating. All children are normal.

hatched. The genes for these sex-linked traits, such as hemophilia, are apparently carried in the nonhomologous part of the X chromosome. The female with but one gene for such a defect is normal, since the second X chromosome carries a gene for normality at this level, but the male with one gene for the defect exhibits it as such, because there is no corresponding gene for normality in the Y chromosome.

Chart 2 *A* shows the transmission of the sex-linked recessive gene when the mother (XX) is a carrier of the gene and the father (XY) is normal. Half the daughters are likely to be carriers, and half the sons are likely to be affected. The lower part of the chart is a pedigree representing this mode of inheritance. At first sight, it could not be distinguished from that shown by non-sex-linked traits.

Chart 2 *B* shows the mode of inheritance when the mother is normal and the father is affected; all the daughters are carriers, and all the sons are wholly normal. The lower part of the chart shows a pedigree illustrating this, and with only this much of a pedigree known the trait would appear as if it were not hereditary or were due to a non-sex-linked recessive factor.

The characteristics of this mode of inheritance are: 1. The trait may appear in offspring neither of whose parents exhibits it, but when it does it appears in the male sex only. 2. Even though the trait is rare, there is not likely to be a concentration of cousin marriages among the parents of affected male offspring greater than is found in the general population, because, unlike the ordinary recessive trait, this does not have to be carried in the chromosomes of both parents before it becomes evident in the male; it comes through the maternal line alone. 3. The female may be affected with sex-linked recessive traits, but there is usually a great predominance of affected males. Females are affected fairly frequently, seldom or never, depending on the widespread occurrence, the rarity and the early lethal quality respectively of the trait in question. 4. The less common the trait, the smaller the ratio of affected females to affected males. 5. When the female is affected, the father is also affected and the mother is at least a carrier of the trait or is herself affected. 6. When the trait is uncommon, there is a percentage of cousin marriages among the parents of affected daughters higher than that found in the general population, although the incidence of cousin marriages among the parents of affected sons only may not be higher than normal.

TRAITS CARRIED IN THE Y CHROMOSOME

Chart 3 represents a type of sex linkage in which the defect is carried in the Y chromosome

at a point at which there is no homologous segment in the X chromosome. Therefore the male possessing such a trait is always affected and passes the trait on to all of his sons, since the transmission of the Y chromosome is from father to son. Certain diseases such as ichthyosis hystrix (Cockayne) and conditions such as zygodactyly (Castle; Seale) have been transmitted in human families from father to all sons, which suggests that there is this type of inheritance in man. The lower part of the chart shows a pedigree illustrating this mode of transmission. The affected father is to the right in the upper part of the chart but to the left in the lower.

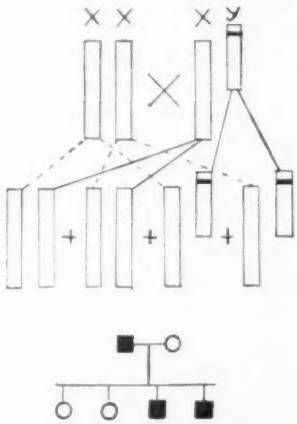

Chart 3.—This diagram shows the gene for a trait in the Y chromosome at a level for which there is no homologous section in the X chromosome, and hence its effects are obvious even in single quantity. Inasmuch as the Y chromosome passes from the father to all his sons, all sons will be defective. The lower figure is a pedigree showing this mode of transmission.

TRAITS EXHIBITING INCOMPLETE SEX LINKAGE

Chart 4 illustrates this mode of inheritance. The gene for the defect is carried in the homologous segments of X and Y. In chart 4, the gene (black bar) is present in the X chromosome of the father (XY). As X chromosomes of the father reappear in all his daughters, all the daughters of such a father will have one defective chromosome. As half of the daughters will receive the affected gene from the mother and half will receive the gene for normality, only half the daughters will be likely to exhibit the defect. Half the sons will be carriers, having received their defective gene from their mother. The lower part of the figure is a pedigree of a family showing such a trait. It looks no different from pedigrees in which the mode of inheritance is explained by a non-sex-linked recessive gene. Since the father received his defective gene in the X chromosome from his mother, the characteristic feature of this mode of inheritance is brought out, namely, that the father passes on the defective gene to those offspring who are of the same sex as the parent from whom he received it.

Chart 5 illustrates the same type of inheritance, only now the father carries the gene for the defect in his Y chromosome, having received it, in turn, from his father. Since the Y chromosome indicates a male, all those who will be affected in the family will be males. The bottom of the figure shows a pedigree which, again, is like those characteristic of non-sex-linked genes,

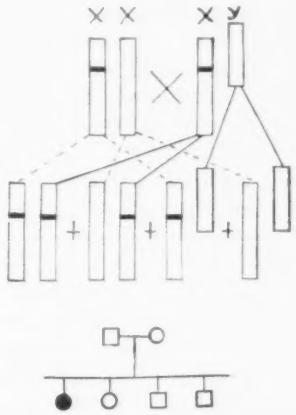

Chart 4.—This diagram shows the gene for a trait in the homologous parts of the X and Y chromosomes. In this figure it is present in the X chromosome of the father; hence half of his daughters will be affected and half will be carriers; half of his sons will be carriers and half, completely normal. The lower figure is a pedigree representing this type of mating.

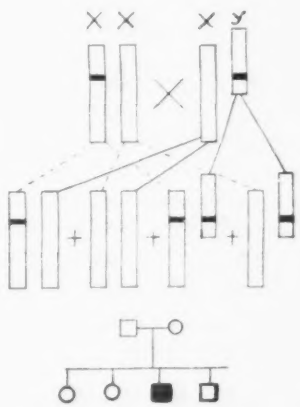

Chart 5.—This diagram shows the gene for the defect carried in the Y chromosome of the father; hence only sons will show the defect in this family. Half the sons and half the daughters will carry the defect latent. The lower figure is a pedigree showing this type of mating.

and it is only when one knows the parent from whom the father received the defect that this special type of sex linkage is brought out. Here again, the father transmits the defect to those offspring of the same sex as the parent from whom he received it.

Incomplete sex-linked recessive inheritance is characterized by most of the features of non-sex-linked recessive inheritance: 1. The trait may appear in offspring whose parents are not affected. 2. If the trait is rare, there is a higher incidence of consanguineous marriages among the parents of affected children than is usual in the general population. 3. The trait may appear in both sexes equally. 4. Herein it differs from the non-sex-linked recessive inheritance, that it tends to appear in one sex only in any one family, although there are exceptions to this rule which will be considered shortly. 5. The sex of the affected offspring is like that of the paternal grandparent from whom the defective gene was inherited, with the exceptions just mentioned to be noted shortly.

How can one tell from which parent the father derived his gene for the defect? There are two possible ways: 1. If a maternal relative of the father had the same defect that was present in the father's children, one might assume with a fair degree of certainty that it was through his mother that he received the ill omened gene; but if the relative was a paternal one, then it would be through his father that he had inherited the factor for the defect. 2. If the father is related to the mother of his children, it is reasonable to assume that it was through a common ancestor that they both received the factor for the defect, this possibility being much more likely than that they should each have received it through their unrelated ancestors, although such a contingency is not impossible. Therefore, if the pedigree gives the information as to the manner in which the husband is related to his wife one can determine with a fair degree of certainty the parent through whom the husband received his gene for the defect. Unfortunately, in most instances in which the parents of the affected children are related, the details of the relationship are not given.

REPORT OF CASE

Miss C. G. first manifested lesions about the face at the age of 2 years. She was seen by Dr. Rudolph Matas and the disease was diagnosed as xeroderma pigmentosum. This diagnosis was confirmed by other physicians who saw the child from time to time. Constant care and immediate treatment as soon as new lesions appeared have kept this girl alive to the age of 16 to 17 (she was 15 years old in 1941 when the case was first brought to my attention).

Family History.—The patient is the second child of the family, the older one being a normal daughter, J. G. The parents are Jewish and are first cousins. Mr. G.'s mother and Mrs. G.'s father are sister and brother. Mr. G. therefore has, in all likelihood, received his gene for xeroderma pigmentosum from his mother and would pass it on to all his daughters, half of whom would likely be affected, having received the duplicate gene from the mother. Half of the daughters would likely be normal, having received a gene for normality from the mother. This family history agrees perfectly with such a theoretic explanation.

The pedigree to the right in chart 6 represents the story as told to me, the line indicating the cousin marriage being saw-toothed here to distinguish it from the other unions. The left side of the chart represents the chromosomes concerned in the transmission of xeroderma pigmentosum in this family if it is incompletely sex linked. The brother and the sister in the second generation both must have had the defective gene, and each must have passed it on to his or her children. Since it is most likely that both the brother and the sister received their gene from the same parent, it must have been the mother in the first generation who was the carrier, because only the female can pass on the same sex chromosome to both sons and daughters. This defective gene may have arisen in her through a mutation, or it may have been transmitted to her from either her mother or her father and may have been present for few or many generations.

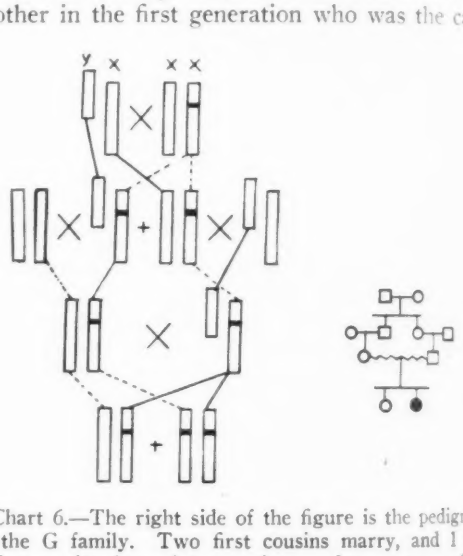

Chart 6.—The right side of the figure is the pedigree of the G family. Two first cousins marry, and 1 of their two daughters has xeroderma pigmentosum. On the left side of the figure is shown the transmission of sex chromosomes in this family if xeroderma pigmentosum is partially sex linked.

The question asked by the parents was this: Could the older daughter have defective offspring if she should marry? If the condition were a simple recessive, not carried in the sex chromosomes, she might belong to either of two classes of persons: 1. She might be wholly free of the defective gene (see the first child to the left in

the upper part of chart 1, who is wholly normal), or (2) she might be a carrier like her parents, having inherited the gene for the defect from one parent and a gene for normality from the other (see the second and third children in the upper part of chart 1). In the first case, she could not have children with xeroderma pigmentosum; in the second case, she might have affected offspring, provided she married a carrier like herself, a possibility rather remote unless she married a cousin. If she belonged to the carrier class, she would pass on the defective gene to half her offspring, on the average. Although she would not have affected offspring herself, she would disseminate the gene for the defect so that some descendant of hers who carried it might mate with another carrier and have a child with the disease.

If the gene for this condition is incompletely sex linked, she has, with a fair degree of certainty, inherited the defective gene from her father, for to be a female she must have received his X chromosome, which is the one with the defective gene. Her chances of disseminating the gene for xeroderma are therefore much greater than if the disease were due to a non-sex-linked recessive gene.

On the other hand, the older daughter is of more than average intelligence, being a college graduate and a member of Phi Beta Kappa. If she does not marry a cousin descended from the great-grandmother, who probably possessed this gene, she has no greater chance of marrying a carrier of xeroderma than has any other person. One must balance the decidedly worth while contributions which she is almost certain to pass on to her children against the probable transmission of a deleterious gene, which may or may not crop out in obvious form in a limited number of her descendants. Such a decision must rest ultimately with the girl herself.

EXCEPTIONS TO THE RULES OF INCOMPLETE SEX-LINKED RECESSIVE INHERITANCE

I stated a few paragraphs back that only one sex would be affected in families in which a recessive gene showing incomplete sex linkage was present. There are exceptions to this because of the possibility of the occurrence of the phenomenon of "crossing over." When the two chromosomes of a pair come together during the process of maturation of the germ cells, they may become intertwined and may break at the point at which this occurs, and homologous parts of the chromosomes may become interchanged. In order to represent this, a pair of autosomes, hence of the same size, are shown in chart 7 (*A*, *B* and *C*). One is white and one black. In 7 *A*, the two members of a pair are fused along their length; ordinarily they pull apart again, each intact, but if crossing over occurs, they twine around each other as in 7 *B* and then break. When they are ready to separate again, each chromosome has a part of its original material in it and a part of the material of its mate. Thus the upper chromosome, which was white, is now white on the left end and black on the right. The lower chromosome, which was black, is black on the left and white on the right (7 *C*).

Figures *D*, *E* and *F* of chart 7 represent the crossing over in the case of the sex chromosomes. The longer chromosome is the X, and the shorter, the Y chromosome. The two clear areas are the homologous portions of the two sex chromosomes; the horizontal barred area is the nonhomologous portion of the X, and the diagonally barred area is the nonhomologous area of the Y chromosome. The small black bar in the Y chromosome in *D* represents the gene for xeroderma pigmentosum. When crossing over occurs, as in *E*, the gene for xeroderma is in the zone of crossing over; hence when the two chromosomes again are reconstituted as separate structures (as in *F*) the gene lies in the X chromosome and will be passed therefore to a daughter instead of to a son. This possibility permits both sexes to be affected in some families and offspring who are of a sex dissimilar to that of the paternal grandparent from whom the defect was inherited to receive the defective gene.

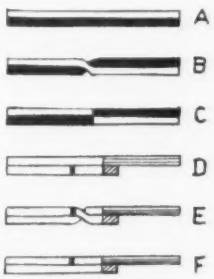

Chart 7.—This diagram illustrates the phenomenon of crossing-over, whereby homologous parts of paired chromosomes may be transposed during the period of maturation of germ cells; also crossing-over in sex chromosomes is illustrated. In the latter circumstances the part of the Y chromosome of the father bearing the defective gene is incorporated in the X chromosome, which, in turn, gives to the Y its normal gene. Thus a man who receives from his father a gene for xeroderma may pass on the defect to a certain proportion of his daughters as well as to his sons. Similarly, when the X chromosome carries the defective gene, this may be transposed to the Y chromosome, leaving the X chromosome normal. In this event, the man who received his gene for the defect from his mother may have some of his sons defective as well as his daughters.

Some years ago I wrote an article (Macklin) pointing out that the statements made in some of the texts on dermatology to the effect that once xeroderma pigmentosum appeared in a family all the children of the same sex as that of the child first affected would show the disease and that none of the children of the other sex in that family would acquire it were not borne out by cases reported in the literature. Moreover, many families showed children of both sexes affected. I considered that the data obtained from the cases reported in the literature supported the idea that xeroderma pigmentosum is dependent on a recessive gene not linked with sex. At the time that this paper was submitted for publication, Haldane's article had not yet appeared. The statements made in my former paper to the effect that not all the children of one sex in any one family will necessarily be affected once the disease has made its appearance and that children of both sexes may be affected in any one family are still correct. The statement that the gene for the disease is not sex linked will have to be revised if further data continue to support Haldane's idea that xeroderma pigmentosum is incompletely sex linked.

Haldane collected the cases from the literature in which the parents were related and in which the manner of the relationship was given. In these instances it could be determined whether the father of the affected children had received his gene for xeroderma from his father or from his mother. If he was related to his wife through his father, the probability was strong that he had derived the gene for xeroderma from his father, and if he was related to his wife through his mother the probability was strong that it was from his mother that he had inherited this gene. It is possible, of course, for both parents, although cousins, to derive their genes for xeroderma from their unrelated parents, but, in view of the rarity of the gene for xeroderma pigmentosum in the population, the chances would be much in favor of their both having inherited the gene from a common ancestor.

In table 1 are presented data for those families collected from the literature which give the manner in which the parents were related, hence which indicate whether the defective gene was coming through the father's paternal or maternal line. I have added 4 more cases in which by personal correspondence I have ascertained from the authors the mode of relationship of the parents, although the original article failed to give this, and have added 1 case of my own.

Several points are to be noted in this table. 1. When the gene for xeroderma came to the father through his mother, he transmitted it to his daughters twice as often as to his sons (10 to 5); this makes a cross-over value of 33.3 per cent. When the gene for the disease came to the father through his father he transmitted it to his sons in 11 cases and to his daughters in 5, a cross-over value of 31.2 per cent. So far the facts seem to be in agreement with the theory of incomplete sex linkage.

SEX RATIOS IN FAMILIES WITH XERODERMA PIGMENTOSUM

There are several other points of interest in this table. One appears to be a disturbance of sex ratios. When the gene was transmitted to the father through his mother, there were more daughters than sons in these families (18 to 10). It is true that in one family (Taylor) there were 7 other children, whose sex is not given. In Alderson's family, no mention of other children is made. When these two families are omitted from the table, there are 14 females to 10 males.

When the father was receiving his affected gene supposedly from his father, there were 30

TABLE 1.—*Sex Distribution in Families with Xeroderma Pigmentosum When Mode of Inheritance Through the Father Is Known*

Author	Affected Sons	Normal Sons	Affected Daughters	Normal Daughters
Disease Inherited Through Father's Maternal Line				
Alderson (L)	?	?	1	?
Hahn (H)	..	..	2	4
Low (H)	(2)	..	..	..
Macklin	..	..	1	1
Monthus (H)	..	2	2	..
Silvers (#)	(1)	..	..	1
Stainer (H)	(1)	1	..	..
Taylor (L)	?	?	3	?
Taylor (L)	(1)	2	1	2
Total	(5)	5	10	8
Disease Inherited Through Father's Paternal Line				
Bell and Rothnem (#)	2	5	..	2
Canright (L)	1	5	..	2
Corson and Knowles (#)	2	1	(1)	2
Cole (#)	..	2	(1)	1
Forster (H)	1	2	..	1
Grier (L)	1	?	(1)	?
Klein (H)	4	3	..	2
Kren (L)	?	?	(1)	?
Siemens (H)	..	1	(1)	..
Total	11	19	(5)	10

(H), cases cited by Haldane.
(L), cases found in the literature.
(#), cases from the literature in which the information was supplied in personal correspondence. Figures in parentheses indicate persons affected with the disease in whom crossing over must have occurred if the gene for the disease is incompletely sex linked.

In Alderson's family the child was the daughter of a woman and her sister's son.

In Bell and Rothenem's family the father's father and the mother's paternal grandmother were brother and sister.

In Canright's family 5 normal males and 1 normal female died in infancy. The paternal grandfather was affected.

In Corson and Knowles's family 2 normal females died in infancy.

In Kren's family there were 3 normal children, sex not given.

In Monthus' family the maternal uncle of these affected females had an affected daughter.

The children of the two families here reported by Taylor were first cousins, the two mothers being sisters. One sister married a first cousin; the other sister married a second cousin.

sons to 15 daughters. Again there is one family (Kren) in which there is no statement made as to the sex of the 3 unaffected children. In Grier's family, no mention is made as to other children. If these two families are omitted from the table, there are more than twice as many males as females (29 to 13). Thus, although there are more males affected when the inheritance is through the paternal line of the father and more females affected when the inheritance is through the maternal line, there are many more males both normal and affected in the first instance and many more normal and affected females in the second than would be expected were normal sex ratios existing in these families. Thus attention becomes focused not so much on the excess of affected males or females as the case might be but on the excess of total males or of total females in these respective families. Are more males found affected merely because there were more males to be affected in the one group and more females affected because there were more females than males to be affected in the other?

As these questions are answered it must be remembered that the families were selected because I knew the manner in which the parents were related and not because there were males or females affected in the families. One should expect, therefore, approximately equal numbers of males and females in these families, or 51.4 per cent males and 48.6 per cent females to be exact, because the normal sex ratio at birth is approximately 106 males to each 100 females. In the first half of the table there are in the families with complete records 14 females in a total of 24 children, or 58.3 per cent. In a group of 24 persons it is expected that there will be 48.6 $\pm$ 10.2 per cent females. Thus the number found is removed by just about the standard deviation from the expected percentage.

In the second half of table 1, in the families with complete records there is a total of 42 children, with 29 of them males. One would expect 51.4 per cent males, and actually 69 per cent are found. The standard deviation of 51.4 per cent in a group of 42 is $\pm$ 7.7. Thus the difference between the expected and the observed percentage (17.6) was 2.3 times the standard deviation.

It is true that this is a limited number of families, and the question naturally arises as to whether these apparently abnormal sex ratios are found in families in general with xeroderma pigmentosum. Unfortunately, the data for the rest of the families reported on in the literature which was accessible to me did not include the manner in which the parents of the patients were related; hence it was not possible to state definitely whether the father was carrying the defective gene in his X or his Y chromosome.

The matter could be approached indirectly, however, in the following manner. It is probable that when males only are affected or when the number of males affected is greater than the number of females affected, the gene for the disease was located in the paternal Y chromosome if this gene is incompletely sex linked. In like manner, if females only are affected or the number of affected females in the family is greater than the number of affected males, it is probable that the defective gene was located in the paternal X chromosome. If the number of affected persons was equal in both sexes, it might be either the X or the Y chromosome of the father that carried the defective gene. I therefore collected the cases from the literature which was available to me, using only those cases in the analysis in which there was good evidence that the family record was complete. Thus if the record merely mentioned the number and sex of the affected offspring but did not mention that there were or were not normal children, it was presumed not to be complete. Thus, it is probable that some of the families which were discarded because of insufficient evidence that their records were complete were in reality families which should have been included in the group of those with complete records. Such omission, however, does not strengthen the evidence of abnormal sex ratios in these families but weakens it. If, in spite of such omission, abnormal sex ratios are still found, one can feel more assured that one is basing one's conclusions on valid evidence.

It is at once obvious that not all families with xeroderma pigmentosum can be grouped together in the analysis, because the excess of males in one group would be counterbalanced by the excess of females in the second. I have therefore divided the cases of xeroderma collected from the literature into four groups, omitting those already listed in table 1. In table 2 are placed those families in which males only were affected; in table 3, those in which females only were affected; in table 4, those in which both sexes were affected, and in table 5, those families in which the record was not known to be complete.

It will be at once evident that the sex ratios in these families appear to be abnormal. In table 2, in which males only were affected and the gene was therefore presumably in the Y chromosome, there are 125 males to only 65 females. In table 3, in which females only were affected, there were 96 females to only 41 males.

On the other hand, in table 4, in which both sexes were affected, there were 60 males to 53 females, a ratio of 113.2, which is high but more nearly normal than those in tables 2 and 3. The percentage of males in this group is 53.1, the expectation being 51.4 ± 4.7. If to the families in table 2 are added those from table 4 in which affected males predominated or were not exceeded by affected females and similarly to the families in table 3 those from table 4 in which the affected females predominated or were not exceeded by the affected males, results are obtained which are recorded in table 6. It is obvious of course that the families in which the number of affected males and females is the same are used twice, once when the line of inheritance may be through the paternal Y chromosome and once when through the paternal X chromosome. There is a total of 177 males to 109 females when the inheritance is presumably through the Y chromosome, and there are only 90 males to 141 females when it is through the X chromosome. Even with allowance for the families in which crossing over must have occurred, there is an excess of males in the one group and of females in the other.

SELECTION OF MATERIAL AS POSSIBLE SOURCE OF ABNORMAL SEX RATIOS

In table 1 the families were selected not because they had either affected males or females but because the manner in which the parents were related was known. In tables 2 and 3, however, it was assumed that the inheritance was through the Y or X chromosome, because there were affected males or affected females in the family.

An excess of males is to be expected when families are selected because they have affected males, and, vice versa, an excess of females is to be expected in families chosen because they have affected females. This is because some families have children all of one sex and are automatically

TABLE 2.—*Families with Males Only Affected*

Author	Normal Males	Affected Males	Normal Females	Relationship of Parents	Comments
Adrian	1	1	..	First cousins	
Beck (H)	4	1	1		
Becker	1 died in infancy	1	5	First cousins	1 female died in infancy
Brown (H)	1	3	4		
Büsching (H)	..	1	1		
Corlett	..	1	..	First cousins	1 miscarriage at 3 months
DuCastel (H)	..	1	1		
Eller	..	2	1		
Fox	2	2	..	First cousins	
Gray	..	1	..	Not related	
Greef (O)	2	2	2		
Guszmann (H)	1	1	2		
Hunter	1	3	4		
Hutchins	..	1	1	First cousins	
Jessup	..	2	..	Not related	
Kring	..	1	..		
Lederer (H)	2	1	2		
Lesser (H)	1	1	..		
Leszczynski (C)	1	2	7	Related	
Loewenthal	1	3	1		
Lord	..	1	1	First cousins once removed	
Lukasiewicz (C)	..	2	1		
Lukasiewic) (C)	2	1	1		
MacCormac	2	1	1	Not related	
Montpellier (H)	1	1	1		
Nicolle (O)	3	3	1		
Nicolle (O)	2	1	1		
Nicolle (O)	1	1	1		
Nicolle (O)	..	1	4		
von Oppolzer	1	3	1	Not related	
Oulmann	..	2	..	Not related	
Per (C)	..	1	..	First cousins	
Piéchaud (C)	..	2	..		
Pringle (H)	2	1	..		
Raynaud (C)	3	2	4	.....	A half sister also affected
Rich	1	2	2	.....	Corrected history obtained from curator of J. H. Hospital records
Ruder (T)	1	6	5	Cousins, not first	
Scherber (C)	3	2	..	Cousins, not first	
Schonnefeld (H)	..	1	2		
Silberstein	..	2	..	Not related	
Thiblerge	1	1	..	First cousins	
Vidal (H)	1	3	1		
Vidal (T)	3	1	1		
Vidal (T)	1	1	1		
White	2	2	3		
Withers	1	1	1		
Total	49	76	65		

C, cited by Cockayne; H, cited by Haldane, O, cited by Ormsby; T, cited by Taylor.

TABLE 3.—*Families with Females Only Affected*

Author	Normal Males	Normal Females	Affected Females	Relationship of Parents	Comments
Andrews	..	..	1		
Balzer (H)	..	1	1		
Brault (C)	1	..	1		
Copeland	1	2	1	First cousins	
Copeland	..	..	1	Not related	
Copeland	..	3	3	Not related	Same as Nichol's cases
Couillard (H)	2	..	1		
Csillag (H)	..	1	1		
Dahring	3	5	1	.....	Four of the five females listed as normal died in infancy
Eisenberg (H)	2	2	1		
Fuss (C)	..	1	1	First cousins	
Geberd (C)	1	..	2		
Halle	1	1	1		
Kaposi	2	6	1		
Lane	..	4	1	Second cousins	
Lesser (C)	..	1	2		
Markowitz	..	..	1	.....	Illegitimate child (personal communication)
Migliorni (C)	2	1	3		
Montgomery	3	1	1	Not related	
(Nichols)	..	3	3	.....	(Same as Copeland's cases; omitted from total)
Nicolle (C)	4	2	1		
Pernet	..	..	1	Not related	
Phillips	..	2	1	First cousins	
Potter	..	1	1		
Quinquand	1	..	2		
Rouvière (O)	4	1	3	Cousins, not first	
Stein (H)	2	..	2		
Taylor	..	..	1		
Terebinski (H)	1	1	1		
Teterjanz (C)	1	1	3	.....	These two families are related
Teterjanz (C)	2	..	2		
Traub	1	2	1	First cousins	
Velhagen	2	..	2	.....	The fathers of these two families were brothers, and the mothers were sisters. Both were Jewish, but the fathers were not related to the mothers as far as known. The second family had 2 miscarriages, 2 deaths in infancy; sex not given
Velhagen	1	1	3		
Vidal (T)	2	..	1		
Vidal (H)	2	..	2		
Walker	..	..	3		
Whittle	..	..	1	First cousins	
Total	41	40	56		

TABLE 4.—*Families with Both Sexes Affected*

Author	Normal Males	Affected Males	Normal Females	Affected Females	Relationship of Parents	Comments
Not given (Arch. Dermat. & Syph. **40**: 143 [July] 1939)	3	1	..	1	Not related	
Anderson	..	1	..	1		
Archambault (C)	2	2	..	1		
Blackmar	1	1	..	1	Not related	Paternal great-grandfather died of cancer of the eye
Brayton	4	1	..	2	Not related	
Crocker	..	1	1	2		
Crocker	..	1	1	1		
Danlos (C)	1	1	3	1		
Dennie	1	2	1	1		
Engmann (C)	1	1	..	1		
Grindon	2	1	..	1		
Kessler	1	1	2	2	Not related	One child, sex not given, died in infancy. Because of completeness of remaining history, cases were included. Same as Dean's cases.
Kudish (C)	2	2	4	1		
Lederer (C)	2	1	..	1		
Mendes da Costa (C)	1	1	1	1		
Metzenauer (C)	3	1	5	1		
Nicolas (H)	2	1	1	1		
Nicolle (C)	..	1	1	1		
Okamura (C)	..	1	3	1		
Simpson	9	1	5	1	First cousins	
Tenneson (C)	1	1	1	1		
Total	36	24	29	24		

TABLE 5.—*Families in Which the History of the Sibship Was Incomplete*

Author	Normal Males	Affected Males	Normal Females	Affected Females	Normal Children, Sex Not Given	Relationship of Parents	Comments
A. Males Only Affected							
Arnozan (C)	..	3	..	..	..	.....	No further history
Artom (C)	..	2	..	..	..	.....	No further history
Berkovsky	..	2	..	..	..	Not related	May have been others
Bowen	..	1	..	..	4	.....	
Chance	..	2	..	..	..	First cousins	Same as Schamberg's cases; may have been others
Corlett	..	1	..	..	..	.....	No further history
Dobell	..	1	1	..	..	.....	No further history
Dubois-Havenith (T)	..	1	..	..	..	.....	No further history
Eller (1934)	..	1	..	..	..	.....	No further history
Fox (1906)	..	2	..	..	..	.....	No further history
Fox (1911)	..	1	..	..	..	.....	No further history
Gottheil	..	1	..	..	..	.....	Several normal sibs, number not stated
Hayman	1	1	..	..	..	.....	May have been others
Heitzmann (T)	..	1	..	..	..	.....	No further history
Jeanselme	..	1	..	..	1	Second cousins	
Junes (C)	1	1	1	..	1	First cousins	
Kaposi	..	1	..	..	..	.....	No further history
Kaposi	..	1	..	..	..	.....	No further history
Kren	..	2	..	..	..	.....	No further history
Lane (1928)	..	1	..	..	..	.....	No further history
Mukai (C)	..	1	..	..	..	Related	No further history
Neisser (T)	..	2	..	..	..	.....	No further history
Nemeth (C)	..	1	..	..	2	Related	
Nicolle (C)	..	2	..	..	..	.....	No further history
Pergola	..	2	..	..	..	.....	A cousin also affected, sex not given
Simpson	..	1	..	..	..	.....	No further history
Steinberg	..	2	..	..	2	.....	Two maternal uncles affected
Sulzberger	..	2	..	..	3	Not related	
Vidal (T)	..	1	..	..	..	.....	No further history
Way	..	1	..	..	..	.....	No further history
Zumbusch (1905)	..	1	..	..	..	.....	Several older sisters normal
B. Females Only Affected							
Adams	..	..	..	1	..	.....	No further history
Beron (C)	..	..	..	2	..	.....	No further history
Cannon	..	..	..	..	..	.....	Same as Copeland's cases
Councilman	..	..	..	2	..	.....	No further history
Dörffel (C)	..	..	..	2	6	Related	
Freund (C)	..	..	..	2	12	First cousins	
Funk (C)	..	..	..	2	..	.....	No further history
Guy	..	..	..	1	..	Not related	No further history
Herxheimer	..	..	..	1	4	.....	
Jamieson (C)	..	..	..	2	..	.....	
Kaposi (T)	..	..	..	1	..	.....	
Kaposi (T)	..	..	..	1	..	.....	
Kerl	..	..	..	1	7	.....	
Kudish (C)	..	..	1	2	2	.....	
Lane (1928)	..	..	..	1	..	.....	
Louste	..	..	..	1	..	.....	
Lynch	..	..	..	1	7	Not related	
Nicolas (C)	2	..	..	2	4	.....	
Perls (C)	..	..	..	2	..	.....	
Peyri (C)	..	..	..	2	..	.....	
Reines (C)	..	..	..	2	..	.....	
Roffo	..	..	..	1	..	First cousins	
Rotch	..	..	..	2	..	.....	
Sachs	..	..	..	1	..	.....	Sibs normal, number not stated
Simpson	..	..	..	1	..	.....	Sibs normal, number not stated
Taylor	..	..	..	1	5	.....	
Toyama (C)	..	..	..	2	..	.....	
Vidal (T)	..	..	..	1	..	.....	
Vignolo-Lutati	..	..	..	1	..	First cousins	
White (1911)	..	..	..	1	..	Not related	Sibs normal, number not stated
deWolf	..	..	..	1	3	Not related	
Zumbusch (1905)	..	..	..	1	..	.....	
Zumbusch (1925)	1	..	..	3	5	Related	
C. Both Sexes Affected							
de Amicis	..	1	..	1	..	Not related	
Bandler (C)	..	1	..	2	9	.....	
Belisario	..	1	..	1	9	Not related	
Bernoulli (C)	..	2	..	2	5	.....	
Cedercreutz (C)	..	1	..	2	4	Not related	
Cedercreutz (C)	..	1	..	1	8	Not related	
Cedercreutz (C)	..	1	..	1	4	Not related	
Diaz (C)	..	1	..	1	..	Related	
Dies (C)	..	1	..	1	..	.....	
Eliassow (C)	..	2	..	1	5	Not related	
Freeman	..	1	..	1	..	.....	
Fuss (H)	..	1	..	1	..	.....	
Grier	..	1	..	1	..	.....	A paternal aunt, grandfather and great-great-grandfather were all similarly affected
Herxheimer	..	1	..	1	..	.....	
Hyde	3	1	..	2	2	.....	
Junès (C)	..	1	..	1	2	First cousins	
Junès (C)	..	1	..	1	..	.....	
Kaposi	..	1	..	1	..	.....	
Kiewer (C)	..	2	..	1	..	.....	

TABLE 5.—*Families in Which the History of the Sibship was Incomplete—Continued*

Author	Normal Males	Affected Males	Normal Females	Affected Females	Normal Children, Sex Not Given	Relationship of Parents	Comments
C. Both Sexes Affected—Continued							
Krelbich (C)	..	1	..	1	..	First cousins	
Loeb (C)	..	1	..	1	..	Not related	
Lustgarten (C)	..	1	..	1	..	.....	
Metscherski (C)	..	2	..	1	3	.....	
Moberg (C)	..	3	..	3	..	.....	
Morini (C)	..	1	..	1	..	First cousins	
Murphy	..	1	..	1	5	.....	
Pick (T)	..	1	..	2	9	.....	
Pusearin	..	1	..	1	..	.....	
Sanctis	..	2	..	1	..	.....	
Seale	..	1	..	1	..	.....	
Segawa (C)	..	1	..	2	..	.....	
Stein (C)	..	2	..	2	..	.....	
Volk (C)	..	1	..	1	..	.....	
D. Sex of Affected Person Not Always Given							
Lenz (C)	3 affected; 6 normal						
Nobili (C)	1 male affected: 1 affected, sex not given						
Ohmichi (C)	3 affected, 1 of them male; parents first cousins						
Stout	2 affected, 1 of them male; 2 normal						
Toyama (C)	4 affected, 1 of them male						
Tuna (C)	2 affected; 4 normal; sex not given						

It may be that many of the families listed in sections A, B and C are in reality complete. They were not so regarded, however, unless the record made it clear that there were no other children in the family. Thus a statement that the patient had an older brother affected would not be accepted as evidence that these were the only children in the family. It may be that the original record gave a complete history but the abstract or citation available did not give a complete record of the sibs; hence the family may be included in this table, whereas reference to the original might have placed it in the tables of families for which the history was complete.

excluded when the basis of selection demands that one particular sex be present in the offspring.

In order to make this clear, a brief example will be given:

In families of 2 children, we would expect the following sex distribution on the basis of chance:

$$(g + b)^2 = g^2 + 2gb + b^2$$

One family will have 2 girls .....g^2
One family will have 2 boys .....b^2
Two families will have 1 girl and 1 boy.....2 gb

Of these four families only three will have boys, and of the 6 children in these three families, 4 will be boys, or 66.6 per cent. This is 16.6 per cent above the 50 per cent of boys expected in the population taken at random.

To state this in actual numbers of males expected in any one family, as Hogben does, rather than in percentages of males expected in the group, it is seen that in the three families having boys, there was a total of 4 boys (2b and b^2), or an average of 1.333 boys per family.

In like manner, families with 3 children will be represented by expanding the expression $(g + b)^3$. Only seven of the eight possible families will have boys, and the percentage of boys in the group will be 57.1. Again, a computation of the average number of boys per family shows that in these seven families there will be 12 boys (three families with 1 boy each, three families with 2 boys each and one family with 3 boys). This gives an average of 1.715 boys per family.

Hogben's table IX gives the average number of persons expected together with the standard deviations in each sized sibship, when one half are expected to be of one class and one half of the other. From this table, table 7 was computed. This sets forth the size of the family (s), the number of families (n_s), the total number of children in the group of families of each size (T_s), the number of boys observed in these families (t_s), the number of boys which would be expected in these families were the boys appearing at random in these families (r_s), the difference between the observed and the theoretic values ($t_s - r_s$), σ^2 or (the square of the standard deviation) and, finally, the ratio of the difference of the observed and the theoretic values to the square root of the standard deviation $\left(\frac{(t_s - r_s)}{\sigma}\right)$.

It will be seen from table 7 that there was a total of 190 children in the families, of whom 103.921, or 54.7 per cent, would be expected to be boys, because of the method of selection of the family, namely, that there must be an affected male in it. Actually, 125 were boys, or 65.8 per cent. The square root of the sum of the standard deviations squared (37.9636) equals 6.16. But the difference between the actual number of boys (125) and the calculated number expected (103.921) is 21.079, which is 3.4 times the standard error. This would indicate that the excess of boys found in these families is highly significant and is not occurring by

chance. Similarly, when the families in which females only were affected are considered, one finds a significant excess of females over and above the excess expected because of the basis of selection. These figures have been set forth in table 8, in which the symbols are the same as those used in table 7. Of a total of 137 children, only 76.463, or 55.8 per cent, should have been females. Actually, 96, or 70.4 per cent, were females. Again the difference between the observed and calculated numbers of females is almost four times the standard error. Thus, if one may rely on the accuracy of these records, there are definitely abnormal sex ratios in these families with xeroderma. It may be that the families listed in tables 2 and 3 and 7 and 8 should be regarded not as families in which there is an excess of males or of females, respectively, but as families in which there is a deficiency of the opposite sex.

As to an explanation for these abnormal sex ratios, I am at a loss. The most obvious one, but one which I feel is not the whole explanation, is that the family histories have been incorrectly recorded—that the physician has put down all the members of the sex which was affected and remembered only about half of the other sex. That explanation seems invalid, since approximately the same percentage of males has been forgotten in one series as of females in the other. If the members of the sex not affected were likely to be forgotten, why did this not apply to all of them? Why were only about one half of them forgotten? This lack of about half the females when the line of inheritance is through the father's paternal line and of about half the males when the inheritance is through the father's maternal line requires further investigation. It seems to hold true also in families with epidermolysis bullosa, reports of which I have collected from the literature and in which the trait behaves as a recessive. It may be that in the phenomenon of crossing over the resulting chromosomes are not always reconstituted normally and the chromosome which would have given a defective female after the gene has crossed over from the Y to the X or a defective male when the crossing over has taken place from the X to the Y is too malformed to permit normal development in the resulting fertilized ovum.

If the sex ratios in these families are abnormal merely because of omission from the record of some members of the sex which is not affected, one might expect that normal members of the same sex as the affected persons would also be omitted from the records. Thus, if the tendency is to emphasize the affected persons and to neglect the normal, the number of normal males as well as of normal females should be lower than the expected number in families in which males are affected; and similarly the number of normal females as well as of normal males should be too low in families possessing affected females. Hence, the percentages of affected males should

TABLE 6.—*Sex Distribution in Families with Xeroderma Pigmentosum When Mode of Inheritance Through the Father Is Not Certain*

	Normal Males	Affected Males	Normal Females	Affected Females
Inherited, probably through father's paternal line.....	80	97	91	18
Inherited, probably through father's maternal line.....	72	18	64	77

Inheritance was supposed to be through the father's paternal line when (1) only males were affected; (2) there were more affected males than affected females; (3) the number of affected males and females was equal.

Inheritance was supposed to be through the father's maternal line when (1) only females were affected; (2) there were more affected females than affected males; (3) the number of affected males and females was equal.

TABLE 7.—*Number of Males Expected in Families with Affected Males*

s	ns	Ts	ts	rs	ts — rs	$ns\sigma s^2(\sigma^2)$	$\frac{ts - rs}{\sigma}$
1	4	4	4	4	0	0	—
2	11	22	18	14.663	3.334	2.4442	2.13
3	8	24	16	13.720	2.280	3.9184	1.15
4	5	20	15	10.670	4.330	3.6110	2.278
5	8	40	28	20.648	7.352	8.6560	2.49
6	2	12	9	6.094	2.906	2.7580	1.75
7	3	21	12	10.581	1.419	5.0010	0.6345
8	2	16	8	8.030	0.030	3.8900	0.0152
9	1	9	5	4.509	0.491	2.2150	0.3299
10	1	10	3	5.005	2.005	2.4780	1.274
12	1	12	7	6.001	0.999	2.9920	0.5775
Total	46	190	125	103.921		37.9636	

s, number of children in the family.
ns, the number of families of that size.
Ts, the total number of children in these families.
ts, the number of males in these families.
rs, the number of males expected in these families if they are occurring in normal ratios.
ts — rs, the observed total less the expected total, or 125 — 103.921, which is 21.079.
$ns\sigma s^2$, the square of the standard deviation. The sum of these values is 37.9636; the standard deviation for the total is the square root of that value or, 6.16. The difference, 21.079, is 3.4 times the standard deviation.

TABLE 8.—*Number of Females Expected in Families with Affected Females*

s	ns	Ts	ts	rs	ts — rs	$ns\sigma s^2(\sigma^2)$	$\frac{ts - rs}{\sigma}$
1	6	6	6	6	0	—	—
2	5	10	9	6.665	2.335	1.1110	2.115
3	9	27	19	15.435	3.565	4.4082	1.698
4	6	24	14	12.804	1.196	4.6932	0.562
5	5	25	18	12.905	5.095	5.4100	2.191
6	2	12	10	6.094	3.906	2.7580	2.352
7	1	7	3	3.527	0.527	1.6670	0.4082
8	1	8	4	4.015	0.015	1.9450	0.0107
9	2	18	13	9.018	3.982	4.4300	1.8920
Total	37	137	96	76.463		26.4224	

The explanation of symbols is the same as in table 7.
The difference between the number of females present in these families (96) and the number of females expected (76.463) is 19.357. This is 3.8 times the standard deviation, which is $\pm \sqrt{26.4224}$, or $\pm$ 5.14.

be too high in families in which males only are affected, and, similarly, the percentage of affected females should be too high in families in which females only are affected. One would expect 50 per cent of males affected in the first class of families and 50 per cent of females affected in the second if these families were chosen at random. They were selected, however, because they had affected males or affected females; therefore the percentage of affected members would be greater than 50, just as the percentage of males in the family is greater than 50 in table 7 when the basis of selection was the fact that males were present. The families from table 7 were therefore analyzed in the same manner, considering the number of males in the sibship as the total number in the sibship (s) and the number of affected males as the number observed (t_s) and with employment of Hogben's formula by which to compute the expected number of affected males (r_s). The results are tabulated in table 9. There was a total of 124 males, and of these 76 were affected. The expectation was 75.19, almost the same as the observed number. The difference was less than one fifth of the standard deviation; this shows that 50 per cent of the males in these families were being affected and that probably all the normal males were recorded.

TABLE 9.—*Number of Affected Males in Families with Males Only Affected*

s	ns	Ts	ts	rs	ts − rs	$ns\sigma s^2(\sigma^2)$	$\frac{ts - rs}{\sigma}$
1	11	11	11	11	0	—	—
2	14	28	20	18.662	1.338	3.0008	0.7724
3	7	21	9	12.005	3.005	3.4286	1.620
4	9	36	22	19.206	2.794	7.0398	1.053
5	3	15	5	7.743	2.743	3.2460	1.522
6	1	6	3	3.047	0.047	1.3790	0.035
7	1	7	6	3.527	2.473	1.6670	1.915
Total	46	124	76	75.190		19.7612	

The explanation of symbols is the same as in table 7.
The difference between the number of males affected in these families and the number of affected males which would be expected is 0.81. The standard deviation is $\pm \sqrt{19.7612}$, or $\pm$ 4.45. The difference is, therefore, less than one fifth of the standard deviation and would indicate that the number of males affected in these families is in agreement with the theoretic expectation of 50 per cent affected.
The number of males (124) in these families is not in agreement with the number of males in tables 2 and 7 (125) because 1 male who died in infancy (Becker) was omitted in this table, inasmuch as it was not known whether he would have been normal or affected.

The families with affected females only were analyzed in table 10; 56 females were known to be affected, and 57.358 were expected to be affected. Again the two numbers show almost perfect agreement and indicate that 50 per cent of the females are affected. These results indicate (1) that percentages of affected persons in these families conform to those expected if the gene for xeroderma is incompletely sex linked and (2) that the physicians recording the cases have not tended to remember unduly the affected males in the first group of families and the affected females in the second, while incompletely recording the normal males in the one and the normal females in the other. The latter conclusion makes me feel that they were probably not incompletely recording the normal members of the opposite sex in these families. Therefore, the disturbed sex ratios in these families are probably real and not due to incorrect recording of the family records. It is to be hoped that in the future physicians will give accurately the number and sex of all the normal offspring as well as of the affected offspring in reporting cases of xeroderma pigmentosum, as well as in reporting on other families in which hereditary traits are being discussed. Also, they should record the manner in which the parents were related, if any relationship exists, so that it can be seen at once whether the father of the affected children was related to his wife through his father or through his mother. With these two sets of facts, the possibility of abnormal sex ratios in these families can be more adequately assessed.

SUMMARY

A new case of xeroderma pigmentosum is reported, in which the girl is the offspring of parents who are first cousins, the father being related to his wife through his mother. Thus the mode of transmission is not opposed to the idea that xeroderma pigmentosum shows incomplete sex linkage.

TABLE 10.—*Number of Affected Females in Families with Females Only Affected*

s	ns	Ts	ts	rs	ts − rs	$ns\sigma s^2(\sigma^2)$	$\frac{ts - rs}{\sigma}$
1	9	9	9	9	0	—	—
2	14	28	20	18.662	1.338	3.0008	0.7724
3	7	21	10	12.005	2.005	3.4286	1.058
4	4	16	12	8.536	3.464	3.1288	1.967
5	1	5	1	2.581	1.581	1.0820	1.520
6	1	6	3	3.047	0.047	1.3790	0.0400
7	1	7	1	3.527	2.527	1.6670	1.957
Total	37	92	56	57.358		13.6862	

The explanation of symbols is the same as in table 7.
The difference between the number of females affected in these families and the number of affected females which would be expected is 1.358. The standard deviation is $\pm \sqrt{13.6862}$, or $\pm$ 3.7. The standard deviation is, therefore, 2.7 times the difference and would indicate that the number of females affected in these families is in agreement with the theoretic expectation of 50 per cent affected. The total number of females in this table does not agree with that in tables 3 and 8 because the 4 females dying in infancy (Duhring) have been omitted.

The cases of related parents of children with xeroderma whose mode of relationship is known are tabulated. These comprise the cases reported by Haldane, others obtained from the literature, 4 cases from the literature in which the mode of relationship was obtained by correspondence

and a hitherto unpublished case, making a total of eighteen families in which the manner of relationship of the parents is known.

When the father was related to his wife through his mother more daughters than sons were affected, and when relationship was through his father more sons than daughters were affected. This is in agreement with the expectation if this disease is partially sex linked. Noteworthy is the small percentage of normal sons in the family when the relationship was through the paternal grandmother and of normal daughters when it was through the paternal grandfather; the significance of this fact is not clear.

Complete data as to the fact of relationship between parents and the manner in which they are related should be given in all reports, because it is only when the manner in which the parents are related is known that incomplete sex linkage can be proved or disproved.

Complete data on the sex of all normal as well as of all abnormal offspring, on the ages of all these persons, on their order in the family and on the number and sex, if known, and of miscarriages or stillbirths should be given. Thus departures from a normal sex ratio can be determined.

Dr. Rudolph Matas, of New Orleans, supplied information concerning Miss C. G., who was his patient, and gave permission to publish the data. Dr. E. F. Corson, Dr. H. W. Cole, and Dr. S. H. Silvers supplied information concerning family relationships in their cases, and Dr. George Foster supplied information concerning the patient of Drs. Bell and Rothnem.

BIBLIOGRAPHY

Arch. Dermat. & Syph. **40**:143 (July) 1939.

Adams, W. B.: J. Cutan. Dis. **25**:472, 1907.

Adrian, C.: Deutsche med. Wchnschr. **30**:116, 1904.

Alderson, in discussion on Schamberg: Xeroderma Pigmentosa, Arch. Dermat. & Syph. **14**:604 (Nov.) 1926.

de Amicis, T.: Berl. klin. Wchnschr. **31**:467, 1894.

Anderson, T. M.: Brit. M. J. **1**:1284, 1889.

Andrews: Xeroderma Pigmentosa, Arch. Dermat. & Syph. **13**:588 (April) 1926.

Becker, S. W.; Pautrier, L. M., and Woringer, F.: A Case of Xeroderma Pigmentosa with Special Pigment Study, Arch. Dermat. & Syph. **25**:915 (May) 1932.

Bell, E. T., and Rothnem, T. P.: Am. J. Cancer **30**: 574, 1937.

Belisario, J. C.: M. J. Australia **2**:148, 1935.

Berkovsky, M.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **45**:233 (Jan.) 1942.

Blackmar, F. B.: Am. J. Ophth. **14**:884, 1931.

Bowen, A.: Xeroderma Pigmentosum, J. A. M. A. **32**:920 (April 29) 1899.

Brayton, A. W.: Xeroderma Pigmentosum, J. A. M. A. **32**:917 (April 29) 1899.

Cannon: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **17**:561 (April) 1928.

Canright, C. M.: Xeroderma Pigmentosum: Report of a Case, Arch. Dermat. & Syph. **29**:668 (May) 1934.

Castle, W. E.: Science **55**:503, 1922.

Chance, B: Am. J. Ophth. **9**:689, 1926.

Cockayne, E. A.: Inherited Abnormalities of the Skin and Its Appendages, London, Oxford University Press, 1933.

Cole, H. N., and Driver, J. R.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **31**:721 (May) 1935.

Copeland, M. M., and Martin, H. E.: Am. J. Cancer **16**:1337, 1932.

Corlett, W. T.: J. Cutan. Dis. **33**:164, 1915.

Corson, E. F., and Knowles, F. C.: Xeroderma Pigmentosum: Unusual Improvement in One Member of an Affected Family, Arch. Dermat. & Syph. **18**: 284 (Aug.) 1928.

Councilman, W. T., and McGrath, G. B.: J. M. Research **21**:331, 1909.

Crocker, H. R.: J. Cutan. Dis. **2**:273, 1884.

Dennie, C. C.: Xeroderma Pigmentosum with Multiple Epitheliomas, Arch. Dermat. & Syph. **28**:426 (Sept.) 1933.

De Wolf, H. F.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **29**:139 (Jan.) 1934.

Dobell: Proc. Roy. Soc. Med. (Sect. Dermat.) **17**:85, 1923-1924.

Duhring, L. A.: Am. J. M. Sc. **76**:424, 1878.

Eller, J. J.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **30**:751 (Nov.) 1934; **40**:1030 (Dec.) 1939.

Fox, G. H.: J. Cutan. Dis. **24**:333, 1906; **29**:599, 1911. Xeroderma Pigmentosum, Arch. Dermat. & Syph. **18**: 798 (Nov.) 1928.

Freeman, W.: Xeroderma Pigmentosum Occurring in Brother and Sister, Arch. Dermat. & Syph. **5**:286 (Feb.) 1922.

Gottheil: J. Cutan. Dis. **31**:515, 1913.

Gray, A. M. H.: Proc. Roy. Soc. Med. **31**:265, 1938.

Grier, G. W.: Am. J. Roentgenol. **6**:556, 1919.

Grindon: J. Cutan. Dis. **33**:394, 1915.

Guy and Jacob: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **26**:576 (Sept.) 1932.

Haldane, J. B. S.: Ann. Eugenics **7**:28, 1936.

Halle, A.: Wien. klin. Wchnschr. **14**:765, 1901.

Hayman, J. R.: Brit. M. J. **1**:662, 1913.

Herxheimer, K., and Hildebrand, R.: München. med. Wchnschr. **47**:1099, 1900.

Hogben, L.: Nature and Nurture, New York, W. W. Norton & Company, Inc., 1933.

Hunter, W. B.: Brit. M. J. **2**:69, 1889.

Hutchins, M. B.: J. Cutan. Dis. **11**:402, 1893.

Hyde, J. N.: J. Cutan. Dis. **21**:573, 1903.

Jeanselme and Hufnagel, abstracted, Arch. Dermat. & Syph. **9**:380 (March) 1924.

Jessup, D. S. D.: Xeroderma Pigmentosum, Arch. Path. **28**:118 (July) 1939.

Kaposi, M.: Wien. klin. Wchnschr. **12**:1112, 1899.

Kerl: Wien. klin. Wchnschr. **30**:701, 1917.

Kessler, J. B.: Xeroderma Pigmentosum: Its Treatment with Autogenous Serum, J. A. M. A. **65**:300 (July 24) 1915.

Kren: Wien. klin. Wchnschr. **22**:869, 1909.

Kring: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **20**:136 (July) 1929.

Lane, C. W.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **18**:469 (Sept.) 1928; **23**:1163 (June) 1931.

Loewenthal, L. J. A., and Trowell, H. C.: Brit. J. Dermat. **50**:66, 1938.

Lord, L. W.: Xeroderma Pigmentosum (Treated with Ultraviolet Light Radiation), Arch. Dermat. & Syph. **16**:639 (Nov.) 1927.

Louste, abstracted, Arch. Dermat. & Syph. **16**:203 (Aug.) 1927.

Lynch, F. W.: Xeroderma Pigmentosum: A Study in Sensitivity to Light, Arch. Dermat. & Syph. **29**: 858 (June) 1934.

MacCormac, H.: Proc. Roy. Soc. Med. **26**:495, 1932-1933.
Macklin, M. T.: Xeroderma Pigmentosum: An Inherited Disease Due to Recessive Determiners, Arch. Dermat. & Syph. **34**:656 (Oct.) 1936.
Markowitz, M.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **32**:343 (Aug.) 1935.
Montgomery, H., and Reuter, M. J.: Xeroderma Pigmentosum: Report of a Mild Case with Histopathologic Studies, Arch. Dermat. & Syph. **26**:256 (Aug.) 1932.
Murphy, G.: M. News **60**:435, 1892.
Nichols, S.: J. M. Soc. New Jersey **29**:41, 1932.
von Oppolzer, R., and Scheichl, F.: Wien. klin. Wchnschr. **49**:363, 1936.
Ormsby, O. S.: Diseases of the Skin, ed. 3, Philadelphia, Lea & Febiger, 1927.
Oulmann, L.: Xeroderma Pigmentosa in Two Brothers, Arch. Dermat. & Syph. **24**:683 (Oct.) 1931.
Pergola, S.: Brit. J. Ophth. **21**:385, 1937.
Pernet, G.: Brit. M. J. **2**:1334, 1902.
Phillips, L. C. P.: St. Barth. Hosp. Rep. **31**:221, 1895.
Potter: J. Cutan. Dis. **35**:179, 1917.
Puscarin, E., and Lazarescu, E., abstracted, Am. J. Cancer **6**:91, 1932.
Quinquand, abstracted, J. Cutan. Dis. **7**:433, 1889.
Rich, A. R.; Davison, W. C., and Greene, C. H.: Bull. Johns Hopkins Hosp. **35**:285, 1924.
Roffo, A. H.: Bol. Inst. de med. exper. para el estud. y trat. d. cáncer **14**:65, 1937.
Rotch, T. M.: Arch. Pediat. **15**:881, 1898.
Sachs, O.: Wien. klin. Wchnschr. **29**:241, 1916.
de Sanctis, C., and Cacchione, A.: Riv. sper. di freniat. **56**:269, 1932.
Schofield, R.: J. Hered. **12**:400, 1921.
Seale: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **16**:666 (Nov.) 1927.
Silberstein, A. G.: Xeroderma Pigmentosum with Mental Deficiency: A Report of Two Cases, Am. J. Dis. Child. **55**:784 (April) 1938.
Silvers, S. H.: Xeroderma Pigmentosum with Hydroa-Vacciniforme-Like Lesions, Arch. Dermat. & Syph. **46**:613 (Oct.) 1942.
Simpson, C. A.: J. Cutan. Dis. **31**:1020, 1913.
Steinberg, E.: Xeroderma Pigmentosum with Multiple Epitheliomas, Arch. Dermat. & Syph. **32**:120 (July) 1935.
Stout: J. Cutan. Dis. **26**:380, 1908.
Sulzberger, M. B.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **36**:197 (July) 1937.
Taylor, R. W.: M. Rec. **33**:261, 1888.
Thibierge, abstracted, J. Cutan. Dis. **7**:433, 1889.
Traub, E. F.: Xeroderma Pigmentosum, Arch. Dermat. & Syph. **35**:1203 (June) 1937.
Velhagen, C.: Arch. Ophth. **37**:182, 1908.
Vignolo-Lutati, K., abstracted, J. Cutan. Dis. **26**:190, 1908.
Walker, N., and Percival, G. H.: Introduction to Dermatology, ed. 9, Edinburgh, W. Green & Son, Ltd., 1932.
Way, S. C.: Kaposi's Disease, Arch. Dermat. & Syph. **26**:364 (Aug.) 1932.
White, C. J.: Boston M. & S. J. **164**:645, 1911.
White, J. C.: J. Cutan. Dis. **3**:353, 1885.
Whittle, C. H.: Proc. Roy. Soc. Med. **27**:1366, 1934.
Withers, S. M., and Coleman, W. G.: Multiple Benign Cystic Epithelioma Associated with Xeroderma Pigmentosum, Arch. Dermat. & Syph. **2**:27 (July) 1920.
Xeroderma Pigmentosum, Arch. Dermat. & Syph. **40**:143 (July) 1939.
von Zumbusch: Wien. klin. Wchnschr. **18**:592, 1905; München. med. Wchnschr. **72**:327, 1925.

A GENERALIZED MERCURIAL (CINNABAR) REACTION FOLLOWING TATTOOING

LIEUTENANT COMMANDER FREDERICK G. NOVY JR., MC-V(S), U.S.N.R.

Tattooing is an ancient and still common custom in the Navy. It is remarkable that more accidents do not follow this procedure. The so-called "artists" that do the tattooing have no concept of antisepsis; their places of business and their instruments are for the most part filthy. Nevertheless, infections are extremely rare when one considers the large number of tattoos that adorn the bodies of the Naval personnel. Nearly every Naval physician has seen a few pyogenic infections arising from this practice. Syphilis and tuberculosis have occasionally been reported following tattooing. A theoretic explanation of the low incidence of infection may be found in the fact that one of the red dyes contains cinnabar, which is mercuric sulfide. This chemical may act as an antiseptic as the needles and other instruments are constantly dipped into the dye.

General chemical reactions to the dyes are rare. When these do occur, they have usually been found to be due to cinnabar (mercuric sulfide). In Sutton and Sutton's[1] textbook, the authors mentioned a case of chronic mercurial dermatitis due to tattoo reported by Madden.

As generalized reactions are uncommon, the following case was of interest to observe.

REPORT OF A CASE

M. J. R. was admitted to the sick list complaining of swelling of the hands. He stated that about thirty-six hours previously he had been tattooed on the dorsum of both hands. On the right hand the blemish consisted of a ship with a motto covering most of the dorsum. Black (or blue), red and green were the pigments used. On the left hand he had a rose tattooed which was slightly larger than a silver dollar. The dyes used were black, red and green. On the left forearm the central part of an old tattoo, consisting of a heart and dagger, was freshened up with a red dye.

Generalized edema of the hands and vesiculation and bleb formation where cinnabar dye had been used.

The patient did not have any appreciable discomfort for the first day after the "operation." This probably was due to the fact that he was still under the influence of alcohol. When he awakened thirty-six hours after the tattooing, however, his hands were badly swollen and he noticed red streaks up both arms. He felt extremely sick, with nausea, headache and sweating.

One year previous to this the patient had had two tattoo marks made on his forearms, with no trouble whatsoever. They were made with red, green and black pigments of unknown composition. He gave no history of previous sensitivity to any of the mercurial preparations or of any allergic manifestations, and there was no history of familial allergy. His past and familial history were noncontributory.

On examination the patient appeared acutely ill. His temperature at this time was 101 F. He presented

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The opinions or assertions contained herein are the private ones of the writer and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large.

1. Sutton, R. L., and Sutton, R. L., Jr.: Diseases of the Skin, ed. 10, St. Louis, C. V. Mosby Company, 1939, p. 549.

an eruption involving particularly the dorsum of both hands. They were equally badly swollen, showing edema. There were fresh tattoos on each hand. In addition to the generalized edema the right hand showed vesiculation and bleb formation everywhere that the red dye had been used. The red configuration of the design could be easily followed. Where other dyes had been introduced, there was no vesiculation. Beginning at the tattoos on the hands a wide macular erythematous band, about 2 inches (5 cm.) in width, extended up the inner aspect of the arm to the axilla. Here the nodes were swollen and tender.

The left hand presented a similar picture, generalized swelling, vesiculation and bleb formation, covering the area only where the red dye had been used. On the left forearm, where the old tattoo of one year's standing had been freshened, there were discrete blebs filling the sites where the red dye had been introduced. On the inner aspect of this arm also there was a wide erythematous streak extending to the axilla. The lymph nodes were enlarged and tender.

The patient was placed in the sick bay. He was treated with warm soaks and wet dressings of a saturated solution of magnesium sulfate.

About one hour after his admission to sick bay a generalized macular brightly erythematous eruption developed. The area of most severe involvement was the chest and abdomen. The patient had received no internal medication. Two hours later his face became swollen and more erythematous. The eyelids were nearly closed by the edema. The temperature remained at 101 F. Examination of the urine showed it to be clear and straw colored, with a specific gravity of 1.015. Litmus paper was not available to test the reaction. Sugar could not be detected, and there was no albumin. A centrifuged specimen on microscopic examination with low power showed it to be loaded with pus cells and epithelial cells. No casts were noted.

The next day the temperature was 99 F. The erythema was less in extent. Edema of the face was still present but less intense. The following day the temperature was elevated to 99 F. on only one occasion. The erythema of the trunk and face had disappeared. The patient appeared well. The hands, however, still showed some edema; many of the blebs had broken and excreted a serous fluid. The erythematous bands on the inner surface of the forearms had disappeared.

On the third day after the onset of the reaction, the temperature was normal. The patient felt perfectly well except for some soreness in the area of the blebs. Examination of the urine revealed nothing abnormal except 15 to 20 pus cells per low power field.

With the regimen of soaks and wet dressings and later boric acid ointment, the vesicular areas dried and healed over. The edema of the hands disappeared. The patient was discharged on the sixth day.

On a visit to the shop of the "artist" who did the tattooing, it was found that he used seven different pigments in his work. He stated that one of the reds that was used contained cinnabar. He would not divulge the composition of the others.

The patient was given patch and scratch tests with these seven dyes. They were black, green, brown, orange, carmine and rose (which contained the cinnabar). In addition, he was tested with cinnabar obtained from a pharmacy, ammoniated mercury ointment U. S. P. and a 1:1,000 aqueous solution of merthiolate.

After forty-eight hours the tests were read. The only dye that produced a positive reaction to both tests was the rose, containing the cinnabar. The pure cinnabar obtained from the pharmacy elicited a stronger reaction. There was a positive reaction to the ammoniated mercury ointment but only a suggestive one to the solution of merthiolate.

COMMENT

This patient presented a generalized reaction following tattooing. The most severe local reaction occurred where a red dye containing cinnabar was introduced under the skin. It does not seem likely that an infection could have produced this picture, as there was no local formation of pus. The areas where other dyes were introduced did not react with vesiculation or bleb formation as one would expect if a contaminated needle had been used. The generalized erythema and the edema of the face subsided rapidly with only local therapy, which would not be the case in an overwhelming infection. Apparently there was a transient toxic nephritis, which well could have been due to mercury.

Cutaneous tests produced a positive reaction only to the dye containing mercury and to mercury preparations.

CONCLUSION

Tattooing with cinnabar (mercuric sulfide) can produce a generalized eruption in sensitive persons.

LESSENED SENSITIVITY TO TUBERCULIN IN ACNE

FRANCIS W. LYNCH, M.D.
ST. PAUL

The possibility of a relationship between acne and tuberculosis has interested many observers. A positive association between the diseases has been strongly upheld by some, but this view is not generally accepted. References to the subject were reviewed recently by Loewenthal, who reported the results of cutaneous tests on a group of dermatologic patients. He stated that "the summary of the relevant literature shows that no conclusion has yet been reached on the relation, if any, between acne and tuberculosis." [1] The present report considers the Mantoux reactions and if a reaction did not appear the test was repeated with a 1:100 dilution. The results were not then published because I was unable to understand their meaning or suggest a possible explanation of the fact that in the absence of acne the Mantoux reaction was more often positive than it was when acne was present. After Loewenthal's publication I again became interested in the data and investigated the records of students who entered the university in 1936-1937 and in 1941-1942 in order to discover whether the ratio would be similar in a larger group and

TABLE 1.—*Mantoux Reactions in Relation to Acne*

	Positive Mantoux Reaction						Negative Mantoux Reaction					
	Male		Female		Total		Male		Female		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1936-1937; total 4,268												
Acne	139	21.9	151	19.9	290	20.8	495	78.1	607	80.1	1,102	79.2
No acne	503	26.6	241	24.4	744	25.9	1,385	73.4	747	75.6	2,132	74.1
Difference	0.047		0.045		0.051							
P. E. Difference	0.011804	= 4.0	0.013557	= 3.3	0.018684	= 2.7						
1939-1940; total 5,065												
Acne	214	23.0	128	24.1	342	23.4	717	77.0	403	75.9	1,120	76.6
No acne	633	29.4	404	27.8	1,037	28.8	1,517	70.6	1,049	72.2	2,566	71.2
Difference	0.064		0.037		0.054							
P. E. Difference	0.011533	= 5.5	0.015100	= 2.5	0.009055	= 6.0						
1941-1942; total 4,415												
Acne	131	20.5	126	24.5	257	22.3	507	79.5	389	75.5	896	77.7
No acne	491	26.1	388	28.1	879	26.9	1,388	73.9	995	71.9	2,383	73.1
Difference	0.056		0.036		0.046							
P. E. Difference	0.013355	= 4.2	0.015446	= 2.3	0.010118	= 4.6						

of a large number of persons with and without acne. Though it is realized that evidence of this nature cannot be conclusive and is without much hope for fruitful results, it seemed that it might be worth while to record the data so that they may be available to future investigators.

The records of students entering the university in the school year 1939-1940 were reviewed with reference to the incidence of positive reactions to intracutaneous tuberculin tests and a possible association with the presence or absence of acne. Tests were made with tuberculin (1:10,000), in order to prolong the period so that the diagnosis of acne would have been made by different groups of examiners, which would thereby lessen the probability of error. The complete data are now published because they may be useful to others at a later date (table 1). These figures cannot be compared directly with those of Loewenthal. His control subjects all presented some cutaneous disease; in my series the control sub-

TABLE 2.—*Summary*

	Positive Mantoux Reaction		Negative Mantoux Reaction	
	No.	%	No.	%
Acne	889	22	3,118	78
No acne	2,660	27	7,081	73

From the University of Minnesota, Division of Dermatology, Dr. H. E. Michelson, Director, and the Students' Health Service, Dr. Ruth Boynton, Director.

1. Loewenthal, K.: Sensitivity to Tuberculin in Acne and in Other Nontuberculous Diseases of the Skin, Arch. Dermat. & Syph. **47**:799 (June) 1943.

jects were ordinary college students not known to differ from the experimental subjects except by the absence of acne.

SUMMARY

A summary of the data (table 2) shows that of 13,748 students 3,549 had positive reactions to the Mantoux test and 3,997 had acne. In each of three years for which the records were examined positive Mantoux reactions were found more often in the absence of acne than when acne was present. Statistical analysis demonstrates that the difference is great enough to be of significance for each series and for each sex, though the difference is considerably greater in males. The clinical significance of these data is not clear but may become evident at some later date. In the series of tests reported on by Loewenthal he observed weaker reactions to tuberculin in the presence of severe acne and in the presence of acne in older subjects. In tests with a 1 : 1,000 dilution of old tuberculin he noted positive reactions more frequently among 65 control subjects than among 87 patients with acne. Thus, both his observations and mine suggest that there is lessened sensitivity to tuberculin in persons with acne.

It may be recalled that in a previous study [2] I noted that reactions to a cutaneous test with staphylococcus toxoid were less frequent among persons with acne than among normal persons.

2. Lynch, F. W.: Acne Vulgaris: A Failure to Demonstrate a Relation to Staphylococcic Infection, J. Invest. Dermat. **3**:305 (Aug.) 1940.

NEUTRALIZATION AS A THERAPEUTIC PRINCIPLE IN CONTACT DERMATITIS

NELSON PAUL ANDERSON, M.D.
LOS ANGELES

In a previous communication [1] I presented some generally accepted facts regarding contact dermatitis. From these facts there was established a new viewpoint as to the causation of contact dermatitis—namely, that it has a toxic chemical origin. This etiologic aspect has been neglected both in principle and in therapy. This neglect has been primarily due to the fact that the concept of an allergic causation has been accepted as true without even the admission that it was really only a theory.

The idea that contact dermatitis is primarily the manifestation of a toxic chemical reaction between the skin and the causative agent has led to a different approach, particularly from the standpoint of therapy.

Four different points of attack can be conceived as applying to this problem of chemical neutralization of a cutaneous irritant. First, direct chemical neutralization may be used. Thus a corrosive and irritant alkali can be neutralized by a weak acid, such as acetic acid (vinegar) or citric acid (lemon juice). The same principle is involved in the use of weak alkalis in the neutralization of irritant acids. Second, one may detoxify the chemical irritant by another chemical which reacts to form either an insoluble or a nonirritating compound. Thus, chromium compounds can be oxidized into innocuous metallic salts by sodium sulfite. Third, the chemical phenomenon of adsorption may be employed. This may be defined as the adhesion of an extremely thin layer of molecules of gases, of dissolved substances or of liquids to the surfaces of solid bodies with which they are in contact. Medicaments based on this phenomenon are the adsorbent powders, such as charcoal and kaolin.[2] Finally, the unusual emulsifying and detergent properties of the new synthetic wetting agents [3] may be used to remove toxic chemicals from the skin, both in preventive therapy and perhaps in therapy of the dermatitis itself. Because of their penetrating powers they can be used also to carry neutralizing or detoxifying agents (discussed in more detail in the section on trinitrotoluene).

APPLICATION OF THEORY TO PRACTICE

In the practice of one physician it is usually a matter of months or even years before extensive practical tests can be made of any new idea or therapy. The following ideas, however, have presented themselves as a result of this newer concept.

Cyanide Dermatitis.—Since internal poisoning with cyanides is treated by sodium nitrite and sodium thiosulfate,[4] it is suggested that one or both of these substances might be used in wet compresses or as a solution to be applied after known exposure by persons (e. g. jewelers) who are sensitive to this chemical. Experimental work on the absorption of hydrocyanic acid vapor through the skin has shown that sodium thiosulfate affords a definite but limited protection against absorption; it doubles the time of exposure without symptoms.[5] Finally, since cyanides on the skin are possibly converted into carbonates, with the production of resulting alkali burns, it has been suggested by others that compresses wet with solution of boric acid, citric acid or citrates be applied.[6] Washings with a weak solution of silver nitrate have been used.[7] One per cent solution of methylthionine chloride is of value in cases of experimental internal cyanide poisoning.[8] Prosser White reported that a weak

1. Anderson, N. P.: Contact Dermatitis, with Special Reference to Industrial Dermatitis: Preliminary Report, Indust. Med. **12**:584-588 (Sept.) 1943.

2. Sollmann, T.: Dichlorethylsulphid (Mustard Gas): The Influence of Solvents, Adsorbents and Chemical Antidotes on the Severity of the Human Skin Lesions, J. Pharmacol. & Exper. Therap. **12**:303-318 (Jan.) 1919.

3. Duemling, W. W.: Wetting Agents, Arch. Dermat. & Syph. **43**:264-280 (Feb.) 1941.

4. Ingegno, A. P., and Franco, S.: Cyanide Poisoning, Indust. Med. **6**:573-576 (Nov.) 1937.

5. Fairley, A.; Linton, E. C., and Wild, F. E.: The Absorption of Hydrocyanic Acid Vapor Through the Skin, with Notes on Other Matters Relating to Acute Cyanide Poisoning, J. Hyg. **34**:283-294 (Oct.) 1934; abstracted, J. Indust. Hyg. **17**:21, 1935.

6. Cyanide Dermatitis, Queries and Minor Notes, J. A. M. A. **118**:935 (March 14) 1942.

7. Braddock, W. H., and Tingle, G. R.: So-Called Cyanide Rash in Gold Mine Mill Workers, J. Indust. Hyg. **12**:259-264 (Sept.) 1930.

8. Smith, R. G.; Mukerji, B., and Seabury, J. H.: Thiocyanate Formation in Cyanide Poisoning as Affected by Methylene Blue and Sodium Nitrite, J. Pharmacol. & Exper. Therap. **68**:351-364 (March) 1940.

solution of sulfuric acid was effective in Nolan's cases.[9] None of these suggestions may prove to be the answer, but I feel that they are ideas that may lead to such an answer.

Chromates and Dichromates.—In a study of the literature dealing with dermatoses due to chromium compounds, as well as in personal experience, one is immediately struck by the fact that while some of the ill effects are possibly of an "allergic" nature certainly others are of a direct chemical action, e. g., chrome ulcers and perforation of the nasal septum. Even in persons whose "allergy" seems definite, as shown by patch tests, the direct toxic chemical effect is not excluded. Parkhurst[10] as early as 1925 successfully recommended the frequent rinsing of the skin with a saturated solution of sodium bisulfite followed by water in the management of potassium dichromate dermatitis occurring in blue print workers. Prosser White had also, as early as 1920, made this recommendation in his text. Apparently the bisulfite acts as a reducing agent, changing the chromium atom from a hexavalent to a trivalent state, so that the chromium no longer exists as a part of the negative (acid) radical (as dichromate) but has been changed to a typical metallic salt, such as chromium sulfate ($Cr_2[SO_4]_3$). It is noteworthy that Parkhurst employed a modified patch test technic at this early date and that a simple chemical reducing agent was able to prevent this "allergic" dermatitis.

Downing,[11] too, has suggested the use of compresses wet with solutions of sodium lactate, sodium citrate, potassium and sodium tartrate, sodium thiosulfate and ammonium polysulfides in the therapy of eruptions due to chromium.

A 5 per cent solution of sodium hyposulfite was found useful by Blair[12] in neutralization of chromic acid to prevent chrome ulcers or holes of the fingers. Reed and McCord found that applications of weak solutions (5 per cent) of such skin-wetting materials as solutions of citric acid, tartaric acid and their combination were effective in arresting the long-continued action of chromium derivatives after the removal of eschars. This applied especially to chrome holes of the skin, yet conceivably sprays of the same material might prove advantageous in cases of nasal involvement.[13]

Fatal poisoning from the external application of chromates may occur. Twelve deaths were reported in a series of patients suffering from scabies in Breslau, where a chromate had been accidentally incorporated into an ointment in place of sulfur.[14]

I have used some of the aforementioned methods in the therapy of actual chromium dermatitis. They have given results in cases of severe eruptions that have far exceeded my expectations. I believe that the use of a liquid soap in which 5 to 10 per cent of potassium sulfite together with a suitable wetting agent has been incorporated will prove of considerable value both in prophylaxis and in therapy.

It is interesting to note that the great majority of papers dealing with simple neutralization of the toxic effects of chrome compounds have been written by persons other than dermatologists. Some of the most recent papers on chromium dermatitis by dermatologists do not even mention this viewpoint in the discussion of either prophylaxis or actual therapy.

Paraphenylenediamine.—For persons engaged in the fur industry, for wearers of furs, for persons who dye their hair and for workers in beauty shops, paraphenylenediamine and closely related compounds are a prolific source of cutaneous irritation. This varies from a mild irritation about the wrists and neck to a severe generalized exfoliating dermatitis. These eruptions can be proved to be "allergic" by a definitely positive reaction to a patch test. Since many persons wear dyed furs and many dye their hair without any apparent untoward reaction to this chemical, it has been stated that the occasional reaction is an idiosyncrasy and that for the vast majority of normal persons the dye is not generally toxic.[15]

With this viewpoint I disagree. Paraphenylenediamine is a powerful poison and can be so

9. White, R. P.: The Dermatergoses, ed. 3, New York, Paul B. Hoeber, 1929, p. 188.

10. Parkhurst, H. J.: Dermatosis Industrialis in a Blue Print Worker Due to Chromium Compounds, Arch. Dermat. & Syph. **12**:253-256 (Aug.) 1925.

11. Industrial Hazards of Chromic Acid, Queries and Minor Notes, J. A. M. A. **96**:633 (Feb. 21) 1931; cited by Downing, J. G.: Industrial Dermatoses: Treatment and Legal Aspects; Review of Recent Literature, J. Indust. Hyg. **17**:138-163 (July) 1935.

12. Blair, J.: Chrome Ulcers: Report of Twelve Cases, J. A. M. A. **90**:1927-1928 (June 16) 1928.

13. McCord, C. P., and Prendergast, J. J.: The Toxic Properties of Selected Less Familiar Metals, M. Clin. North America **26**:1281-1302 (July) 1942.

14. Urban: Chromate Poisoning: I. Skin Lesions, Berl. klin. Wchnschr. **56**:363-365, 1919. Colden, C.: Chromate Poisoning: II. Eye Changes, ibid. **56**:365, 1919. Hanser, R.: Chromate Poisoning: III. Pathological Anatomy, ibid. **56**:365-368, 1919. Forschbach: Chromate Poisoning: IV. Clinical Aspects, ibid. **56**: 368-370, 1919; abstracted, J. Indust. Hyg. **2**:26, 1920-1921.

15. Keschner, M., and Rosen, V. H.: Optic Neuritis Caused by a Coal Tar Hair Dye, Arch. Ophth. **25**: 1020-1024 (June) 1941.

proved by experiments on animals. In fact, there are a number of isolated examples of severe systemic poisoning,[16] optic neuritis,[15] eighth nerve deafness and even death [17] occurring without any outward expression of cutaneous irritation. It is extremely doubtful that any one can use such a product over an extended period without some effect on the general health. Prosser White stated (page 405): "The harmful action of the phenylenediamines is direct and chemical, not anaphylactoid. Sensitization is not called into play."

Therapeutically, it might be mentioned that wet compresses of solution of sodium thiosulfate [18] have been advocated for treatment of cutaneous irritation, although there are some reports to show that in some instances it may actually enhance the toxicity of the dye.

Certainly when the hair of the scalp seems to be the site of the original trouble, it should be removed by clippers. Oxidation of the dye with hydrogen peroxide lessens its powers of cutaneous irritation according to Percival,[19] possibly by lessening its toxicity. Sodium hyposulfite has been suggested as a washing agent for workers manufacturing and using dyes.[20]

Trinitrotoluene.—In a recent article on trinitrotoluene, Norwood,[21] the medical supervisor of a large ordnance works, has shown that both sodium sulfite and potassium sulfite will remove this dangerous chemical from the skin of persons contacting it. Norwood was primarily interested in the reduction of poisoning from the substance rather than the prevention or treatment of the dermatitis resulting from it. The solution of the problem offers considerable to the dermatologist, however.

Webster during the First World War developed a reagent for the detection of minute amounts of trinitrotoluene on the skin. His reagent consisted of 1 part by volume of a saturated solution of sodium hydroxide in absolute alcohol to 9 parts by volume of absolute alcohol. When this reagent comes in contact with trinitrotoluene a deep purple color is produced. To test for trinitrotoluene on the skin of a worker, a small piece of cotton is moistened with the reagent and wiped on the skin. Norwood stated: "The worker who has washed thoroughly with the customary soap and water is surprised to find that the skin of his face, neck, hands and ankles, and other parts of his body still turn purple when the reagent is applied to these parts, because T. N. T. is still present." This test should certainly be applied from day to day in the management of contact dermatitis due to trinitrotoluene, in order to ascertain whether the irritant can be detected in the areas of dermatitis and, if so, for how long a period.

Webster's test can also be used for the detection of dinitrotoluene (D. N. T.) and tetryl on the skin. The former gives a blue color and the latter a dark brown. The test is also useful for the detection of any of the three chemicals on the worker's clothes after they have been laundered.

Trinitrotoluene in pure form has always been assumed to be insoluble in sodium sulfite, because a 15 per cent solution of the latter is used in separating trinitrotoluene from its isomers. However, this is not exactly true, and commercial trinitrotoluene is eighty times more soluble in a 10 per cent solution of sodium sulfite than in a solution of liquid soap and water.

After experimenting with several soaps containing sodium sulfite, potassium sulfite and various wetting agents, Norwood was able, with the help of the soap companies, to develop a liquid soap which possesses considerable power to remove trinitrotoluene from the skin. At present these soaps contain from 5 to 10 per cent potassium sulfite (sodium sulfite separates out from liquid soap) and, in addition, wetting agents in strengths of from 5 to 15 per cent. Soaps of this type are also of value for the removal of tetryl. During several months' use of these special soaps the incidence of dermatitis from trinitrotoluene and tetryl has appreciably diminished. Greasy applications may increase the risk of absorption and so probably should be avoided.[22]

16. Nott, H. W.: Systemic Poisoning by Hair Dye, Brit. M. J. **1**:421-422 (March 8) 1924. Close, W. J.: Poisoning from Hair Dye (Paraphenylenediamine), M. J. Australia **1**:53-54 (Jan. 9) 1932. Israels, M. C. G., and Susman, W.: Systemic Poisoning by Phenylenediamine, Lancet **1**:508-510 (March 10) 1934.

17. Peters, H. R., and Sacks, M. S.: Systemic Poisoning Due to Synthetic Organic Hair Dye: Fatal Case with Autopsy, Ann. Int. Med. **12**:2032-2042 (June) 1939.

18. Williams, A. W.: The Treatment of Paraphenylenediamine Dermatitis, Brit. M. J. **1**:191-192 (Feb. 2) 1924.

19. Percival, G. H.: Experimental Observations on Dermatitis Due to Dyed Fur, Lancet **2**:417-424 (Aug. 22) 1931.

20. Koetzing, K.: New Method of Hand-Washing for Workers in Trades Manufacturing and Using Dyes, Arbeitsschutz, 1936, pp. 19-21; abstracted, J. Indust. Hyg. & Toxicol. **18**:90 (June) 1936.

21. Norwood, W. D.: Trinitrotoluene (T. N. T.); Its Effective Removal from the Skin by a Special Liquid Soap, Indust. Med. **12**:206-208 (April) 1943.

22. Ministry of Labor and National Service Factory Department, Form 330, December 1942—Memorandum on the Prevention of Industrial Dermatitis with Special Reference to the Use of Barrier Substances, abstracted, J. Indust. Hyg. & Toxicol. **25**:106 (Jan.) 1943.

Trinitrophenol.—Contact dermatitis from trinitrophenol (picric acid) has been observed to follow the use of the chemical in the sterilization of operative fields and in the treatment of burns. It also occurs in industry in workers making explosives. Since a paste of magnesium carbonate [23] is of value in removing stains caused by trinitrophenol, there should be no good reason why it cannot be employed in the treatment of contact dermatitis due to this chemical. According to Pack,[24] trinitrophenol is best removed from the skin by alcohol or by a 3 per cent solution of lithium carbonate. The methods proposed in the preceding section should be given a trial.

Dermatitis from Cutting Oils.—The eruptions arising from exposure to cutting oils and variously termed chloracne, oil acne, "perna" acne and the like are most commonly seen in machinists but are by no means limited to them. Identical eruptions occur in workers contacting chlorine, as in the manufacture of chlorine [25] and of hydrochloric acid,[26] and in electrical workers handling wires insulated with chlorine-containing hydrocarbons in the manufacture of electric condensors and other equipment.

Since chloracne seems to depend, at least in part, on the ease with which chlorine atoms are released from the hydrocarbon base,[27] it would seem that some form of therapy might be devised to neutralize or otherwise change this chlorine atom to render it inactive.

The first thought which occurs is, of course, the use of a weak solution of silver nitrate (0.125 to 0.25 per cent). While it might be effective, the staining which occurs after subsequent exposure to light would probably preclude its use.

Adsorption of the chlorine atom or of the chloronaphthalenes and chlorodiphenyls might be accomplished with activated charcoal. This substance has been advocated for use in treatment of poisoning from mercury bichloride and other physiologically active substances. It has long been used by chemical engineers for the removal of chlorinated phenols from water.

Whether the excess, or loosely bound, chlorine atoms could be removed from the oil by some filtration process without seriously affecting the cutting oil would have to be determined by chemical engineers. From a dermatologic standpoint it would be pertinent to find out if some practical local use could be made of activated charcoal in the adsorption of chlorine and chlorinated hydrocarbons which remain on the skin of machinists and other workers with chlorinated compounds.

The general antidote proposed by McNally [28] for internal use in cases of internal poisoning in which the causative agent is unknown might be given a trial—used, of course, externally:

Magnesium oxide	2 parts
Activated charcoal	} of
Tannic acid	} each
Purified fullers' earth	} 1 part

Incidentally, death may occur in workers with chlorinated naphthalenes. In 1 case other coworkers had chloracne.[29]

Iodine.—Iodine, especially in the form of its tincture, can give rise to severe irritation of the skin. This is essentially an "allergic" contact dermatitis, which at times may be so severe as to cause death.[30] At other times it apparently acts like a primary irritant.

The value and rationale of treating such an "allergic" dermatitis with dressings wet with solution of sodium thiosulfate (1:200) has been discussed in a short note by R. L. Sutton Jr.[31] It would be interesting to learn whether in all patients sensitive to iodine, the immediate application of such a chemical antidote after exposure would prevent subsequent iodine dermatitis. As a matter of fact, this has been accomplished in some cases.[32] Those cases should be studied from the standpoint of the longest interval that

23. Dermatitis from Trinitrophenol, Queries and Minor Notes, J. A. M. A. **95**:1284 (Oct. 25) 1930.

24. Pack, G. T.: The Therapeutic Use and Toxcity of Picric Acid, with a Report of Two Cases, J. Indust. Hyg. **4**:501-506 (April) 1922.

25. Nicolas, J., and Pillon, M.: Case of Chlorine Acne, Paris méd. **1**:62-68 (Jan. 16) 1926; abstracted, J. Indust. Hyg. **8**:186, 1926.

26. Nicolas, J., and Pillon, M.: Case of Chlorine Acne, Bull. Soc. franç. de dermat. et syph. (Réunion de Nancy) **32**:33-36 (July 18) 1925; abstracted, J. Indust. Hyg. **8**:55 (March) 1926.

27. Jones, J. W., and Alden, H. S.: Acneform Dermatergosis, Arch. Dermat. & Syph. **33**:1022-1034 (June) 1936.

28. McNally, W. D.: Diagnosis and Treatment of the Common Poisons, J. Indiana M. A. **31**:683-691 (Dec.) 1938.

29. McLetchie, H. G. B., and Robertson, D.: Chlorinated Naphthalene Poisoning, Brit. M. J. **1**:691-692 (June 6) 1942.

30. Alexander, R. C.: Fatal Dermatitis Following the Use of Iodine Spirit Solution, Brit. M. J. **2**:100-101 (July 19) 1930. Seymour, W. B., Jr.: Poisoning from Cutaneous Application of Iodine, Arch. Int. Med. **59**:952-966 (June) 1937.

31. Sutton, R. L., Jr.: Treatment of Iodine Burns with Sodium Thiosulphate Solution, Arch. Dermat. & Syph. **33**:1062 (June) 1936.

32. Richardson, F. S.: Pre-Operative Skin Sterilization: The Use of a Saturated Sodium Thiosulphate Solution in 70 per Cent Alcohol to Prevent Iodine Burns, Minnesota Med. **17**:177-179 (April) 1934.

could elapse after the use of the iodine before the sodium thiosulfate would no longer act as an absolute protective.

It is possible that similar therapy might be employed with value against eruptions due to contact with iodoform. Wet dressings of solution of sodium chloride might also be useful.[33]

Fluorides.—For chemical burns from hydrofluoric acid, therapy consists of repeated application of a paste made of glycerin or liquid petrolatum and magnesium oxide followed by the injection of a sterile 10 per cent solution of calcium gluconate into and below the burned area.[34] Such therapy seems to be effective, and it suggests the use of a similar paste followed by wet dressings of 10 per cent solution of calcium gluconate in treatment of contact dermatitis due to fluorides (ant powder). Other work suggests the possible value of compresses wet with solution of boric acid or aluminum sulfate.[35] The latter (alum) apparently converts fluorine into aluminum fluoride, an insoluble compound.

Mercurial Dermatitis.—Cases of contact dermatitis due to both inorganic and organic mercurial preparations are well known to the dermatologist. Such a dermatitis also occurs in workers with explosives (mercury fulminate).[36]

The use of sodium formaldehydesulfoxalate internally in treatment of poisoning due to mercury bichloride suggests the possibility of its use as a wet compress in cases of mercurial dermatitis.[37] With it might be combined sodium bicarbonate. Other possible preparations include sodium thiosulfate,[38] strontium thioacetate,[39] calcium sulfide,[40] sodium hypophosphite, sodium acetate, sodium phosphite and potassium bitartrate.[38] From Fantus' work on internal mercurial poisoning, a mixture of sodium hypophosphite, sodium acetate and hydrogen peroxide might be tried locally.[41]

Arsenic.—Occupational contact dermatitis occurs from arsenic.[42] Dressings wet with solution of sodium thiosulfate should certainly be given a trial, and also perhaps wet compresses of magnesium sulfate[43] or sodium hydrosulfite.[44] The possibility of using sulfhydryl compounds (glutathione, sodium thioglycollate, monothioethylene glycol) locally should be investigated further.[45]

Barium.—Contact dermatitis from barium salts must be infrequent except that caused by depilatory pastes used in the axillas. Since pharmacologic effects of barium are antagonized by magnesium[46] and vice versa, it would seem that in such instances of dermatitis due to barium compresses wet with solution of magnesium sulfate might be used.

Formaldehyde.—If any chemical needs some agent to neutralize it or detoxify it or otherwise render it innocuous, that chemical is formaldehyde. As a "sensitizer" or toxic substance in industry it stands nearly supreme as a cutaneous irritant. As a constituent of many of the resins—phenol-formaldehyde resins, urea-formaldehyde resins (glues) and other synthetic substances—it is widely contacted in industry both in time of peace and in time of war.[47]

33. Pelner, L.: Iodine Allergy, J. Lab. & Clin. Med. **27**:1150-1155 (June) 1942.

34. Jones, A. T.: The Treatment of Hydrofluoric Acid Burns, J. Indust. Hyg. & Toxicol. **21**:205-212 (June) 1939.

35. Marcovitch, S., and Stanley, W. W.: A Study of Antidotes for Fluorine, J. Pharmacol. & Exper. Therap. **74**:235-238 (Feb.) 1942. Kempf, C. A.; Greenwood, D. A., and Nelson, V. E.: Studies Relating to the Toxicity of Fluorine Compounds, J. Lab. & Clin. Med. **22**:1133-1137 (Aug.) 1937.

36. Schwartz, L.: Dermatitis, abstracted, Indust. Med. **12**:18 (Jan.) 1943.

37. Modell, W.; Gold, H.; Winthrop, G. J., and Foot, E. B.: Sodium Formaldehyde Sulphoxalate in Experimental Poisoning by Mercuric Chloride, J. Pharmacol. & Exper. Therap. **61**:66-81 (Sept.) 1937.

38. Young, A. G., and Taylor, F. H. L.: The Effect of Sodium Thiosulphate on Mercury Poisoning, J. Pharmacol. & Exper. Therap. **42**:185-195 (June) 1931.

39. Haskell, C. C., and Forbes, J. C.: The Employment of Strontium Thioacetate as an Antidote in Poisoning by Mercuric Chloride, J. Pharmacol. & Exper. Therap. **35**:147-153 (Feb.) 1929.

40. Haskell, C. C., and Courtney, R. H.: The Value of Calcium Sulphide in the Treatment of Poisoning by Mercuric Chloride, J. Lab. & Clin. Med. **3**:110-114, 1917-1918.

41. Fantus, B.: Antidotes in Mercuric Chloride Poisoning: An Experimental Study, J. Lab. & Clin. Med. **1**:879-894, 1915-1916.

42. Vigne, P.: Occupational Dermatitis from Arsenic, Ann. de dermat. et syph. **1**:1150-1183 (Nov.) 1930.

43. Hansen, O. S.: Magnesium Sulphate in Arsenic Poisoning, J. Pharmacol. & Exper. Therap. **17**:105-113 (March) 1921.

44. Bond, W. R.: The Treatment of Acute Arsenic Poisoning, Virginia M. Monthly **60**:36-38 (April) 1933.

45. Walker, E.: Chemical Constitution and Toxicity, Biochem. J. **22**:292-305, 1928.

46. Joseph, D. R., and Meltzer, S. J.: Mutual Antagonistic Life-Saving Action of Barium and Magnesium: A Demonstration, Am. J. Physiol. **25**: xvii-xviii, 1909-1910.

47. Schwartz, L.: Dermatitis from Synthetic Resins and Waxes, Am. J. Pub. Health **26**:586-592 (June) 1936. Bagnulo, E. G.: Industrial Dermatosis, Indust. Med. **9**:23-25 (Jan.) 1940.

Because formic acid is thought to be the irritating end product in most instances, attempts have been made to neutralize this acid by the application of a saturated solution of sodium bicarbonate.[48] This is allowed to dry on the exposed areas of the body without being wiped off. Borax[49] has also been used in a similar manner.

Because of the chemical ability of triethanolamine[50] to combine directly with acids and acidic gases, some preparation containing this chemical might be tried for persons sensitive to formaldehyde.

Solutions of sodium or potassium sulfite and sodium or potassium bisulfite, used alone[51] or in combination or incorporated in liquid soaps (potassium salts only), should prove useful. A solution containing 5 per cent urea and 1 per cent ammonium phosphate was found to be useful for removing formaldehyde from laboratory specimens.[52]

Finally, the following solution, successfully used to remove formaldehyde from laboratory specimens,[53] is now being employed by me in selected cases:

	Gm. or Cc.
Sodium thiosulfate	120
Ammonium hydroxide (28 per cent)	5
Glycerin	75
Water, to make	1,000

Alkaloids.—Since tannic acid is a well known antidote to the alkaloids (not the salts of the alkaloids, such as morphine sulfate and atropine sulfate), it would seem reasonable to suggest its use in wet compresses in treatment of dermatitis due to alkaloids—opium, belladonna and others.

COMMENT

In the preceding paragraphs several ideas and suggestions for therapy in cases of contact dermatitis have been made. Some of these have already been tried and proved successful both by me and by others. Some suggestions are as yet merely theoretic, but they should and will be tried as the occasion arises. These ideas presented themselves after the present day concept of contact dermatitis as fundamentally allergic in nature had been totally disregarded. Other ideas for the therapy of eruptions due to these and similar toxic chemical irritants will undoubtedly occur to many investigators.

No one will deny that patch tests have proved their value in the determination of causative irritants. It is not the fault of the tests but rather of the testers that they have not been viewed in a broader sense. By this is meant that patch tests should be used as an aid, not only in the exact diagnosis of a causative agent but in the selection of a remedy other than the avoidance of contact with the irritant.

Work needs to be done in the direction that was first pointed out years ago by Parkhurst and which by right of priority might be called Parkhurst's modification of the patch test. This consists in the simultaneous application of two or more patches of a known irritant. One site is allowed to remain "as is," for a positive control. The other sites are allowed to remain for varying periods before a known neutralizing substance is applied, in order to ascertain how long a period may elapse before neutralization is no longer effective. When no effective neutralizer is known, these different test sites—other than the control—should be treated each with a different substance. These should be substances which chemical studies or clinical work suggests have a reasonably fair prospect for neutralizing or otherwise modifying the irritant which has been applied. In general, chemicals should be used which are harmless and are not sensitizers themselves. Or several positive reactions should be allowed to develop. Then various methods of therapy can be applied, a different one to each area, in order to ascertain the most effective means of treating the eruption once it has actually developed. This, of course, could also be accomplished by treating one area of involvement by one method and another area by a different method.

I am convinced that in many, if not all, cases of contact dermatitis part of the causative agent is absorbed and produces constitutional reactions and, further, that another portion of the causative agent remains in the regions involved and that it could be detected in such areas by appropriate chemical methods.

In my opinion, the greatest need at present in the management of contact dermatitis is not for

48. Shepard, N. A., and Krall, S.: Poisons in Rubber Industry: Rash Produced by Hexamethylene-Tetramine and a Means of Prevention, J. Indust. Hyg. **2**:33-38 (May) 1920.

49. Quinby, R. S.: Health Hazards in the Rubber Industry, J. Indust. Hyg. **8**:103-112 (March) 1926.

50. Kindsvatter, V. H.: Acute and Chronic Toxicity of Triethanolamine, J. Indust. Hyg. & Toxicol. **22**:206-212 (June) 1940.

51. Fort, W. B.; Wilson, H. C., and Goldberg, H. G.: Daily Removal of Formalin from Preserved Biologic Specimens Used in Class Work, Science **94**:169-170 (Aug. 15) 1941.

52. Foust, H. L.; Leith, T. S.; Talbut, H. M., and Bowstead, L.: Denaturizing Formaldehyde, Science **82**:498 (Nov. 22) 1935.

53. Elvers, C. F.: Deformol: A Simple Technique for Removing Formaldehyde from Preserved Tissue Specimens, Bull. Johns Hopkins Hosp. **73**:138-139 (Aug.) 1943.

an increased knowledge of allergy but for a knowledge of chemistry. The fields of chemistry—inorganic, organic, physical and biologic—offer great promise of reward to physicians who will discard their preconceived ideas as to the causation of contact dermatitis. If dermatologists do not approach this new view with open minds, then some industrial chemist who has never heard of allergy will be able to achieve results that should rightly belong to specialists in this field.

CONCLUSIONS

In dealing with contact dermatitis of all types, but especially those due to known organic or inorganic chemicals, the physician must consider the probability of there being a direct toxic chemical irritation.

From the observations reported the question is directly raised as to whether contact dermatitis as ordinarily considered should continue to be regarded solely as a definite allergic manifestation.

As a result of specific examples of definite neutralization of specific irritants, I believe that this newer and broader view of contact dermatitis will lead both to prophylactic and to actual therapeutic results obtainable in no other way.

This is a field to which investigative dermatologists should devote much thought.

2007 Wilshire Boulevard, Los Angeles 5.

CONTACT ECZEMA DUE TO NAIL POLISH

WILLIAM L. DOBES, M.D.
ATLANTA, GA.
AND
LIEUTENANT PHILIP H. NIPPERT, MC-V (S), U.S.N.R.

Several reports dealing with allergic eczema due to contact with nail polish have appeared in the literature of the past few years.[1] Recently there has been an increase in the number of cases encountered. Frequently the diagnosis is difficult, yet there are certain features that suggest the etiologic agent.

We agree with others that nail polish is one of the most frequent causes of dermatitis of the eyelids in women. One or both upper eyelids are usually involved, but both the upper and the lower lids may be simultaneously affected. Interesting features of nail polish dermatitis are its patchy appearance and the fact that the lesion is most frequently limited to the medial portion of the upper eyelid. Although diffuse dermatitis may be caused by nail polish, this type of eruption is more frequently caused by other allergens. Persons acquire the habit of rubbing their eyelids with the backs of their hands and with their nails. The nervous habit of picking at the inner corners of the eyelids accounts for the patchy involvement. When the closed lids are rubbed with the finger tips, usually only the upper lids are touched. This is why the lower lids usually remain unaffected. The habits of resting the chin on flexed fingers, biting the nails and probing the nares and the ears with the finger tips result in patches of dermatitis in the areas where the nails touch the skin. The sides of the neck usually show a more diffuse dermatitis. Contact is made by readjusting the collar or dress when arranging the hair. If any specific areas are constantly exposed to contact with the allergen, the skin in these limited patches may become lichenified and clinically give a picture of a lichen chronicus simplex. This was observed in 4 of our patients. Adjusting the brassière, girdle, hose or other garment may cause the eruption to appear on almost any part of the body where contact with nail lacquer is made.

We wish to report the cases of 90 patients who have come under our observation. The most frequent locations of the eruption are shown in the table.

The oldest patient was 60 and the youngest 2 years of age. All the patients (except 1 Negress) were white women. Several of the cases which were interesting in regard to differential diagnosis are presented in more detail.

Areas Involved in Ninety Cases of Dermatitis Due to Nail Polish

Areas Involved	No. of Cases
Eyelids only	22
Eyelids, chin and neck	28
Areas of face other than eyelids	29
Areas on body other than face and neck	11
Total	90

REPORT OF CASES

CASE 1.—A white school teacher aged 29 was seen on Oct. 21, 1942. Her past history was irrelevant except for an eruption which had been present for more than two years and was limited to the left side of her neck and the left hip. She had been treated with roentgen therapy when the eruption first appeared, in 1940. The eruption soon disappeared after the treatment but recurred six weeks later. When we examined the patient, there was on the left side of her neck a well circumscribed lichenified, dry, slightly hyperpigmented oval patch which measured 5 by 7 cm. A similar patch was present on her left hip. The patient stated that she slept with her right hand beneath the left side of her neck and her left hand in contact with the left hip. The patches of lichenification corresponded with the areas of contact with the nails. No other area of her skin was involved at any time. A patch test with nail polish produced a positive reaction. The eruption cleared after use of the offending agent was discontinued, and it has not recurred during eight months of observation.

CASE 2.—A white housewife aged 60 gave a history of keeping her arms folded at frequent intervals. Examination on June 5, 1941 showed on each upper extremity two well circumscribed lichenified, dry, desquamating patches. Each patch was approximately 5 or 6 cm. in diameter. The areas affected were on the arms and forearms immediately above and below the cubital fossae and corresponded to the areas of con-

Presented before the American Academy for Clinical Research, Atlanta, Ga., Oct. 6, 1943.

1. Sulzberger, M. B.: Hypersensitivity to Nail Polish, Arch. Dermat. & Syph. **36**:460 (Aug.) 1937; Eczema Venenatum from Nail Polish, ibid. **42**:218 (July) 1940. Feller, H. B.: Eczema Venenatum Due to Lipstick and Nail Polish, ibid. **42**:224 (July) 1940. Hollander, L.: Nail Lacquer Dermatitis, J. A. M. A. **115**:1714 (Nov. 16) 1940.

tact with the nail lacquer when the arms were folded. These eczematous patches had been present three years. The rest of the body has always been free of any eruption. The patch test with nail polish elicited a positive reaction. The rash spontaneously cleared when contact with nail polish was prevented.

CASE 3.—A white student 14 years of age presented an eruption which had been present for the past six months. She also complained of excessive dandruff and a rash on her ears, her eyelids, the sides of her

Fig. 1.—A circumscribed patch of dermatitis of the upper eyelid due to nail polish.

mouth and the back of her neck. The patient was found to have greasy scaling and scabbing of seborrheic dermatitis in her scalp. The external auditory canals were red and scaly. Each of the upper eyelids presented medially an oval patch 1 by 2 cm. in diameter that was inflamed, slightly edematous and scaly. The nostrils were red and scaly. The left side of the chin showed an inflammatory weeping eruption. This eruption was circumscribed and 8 cm. in diameter. This patient had been treated unsuccessfully for seborrheic dermatitis six months previously, when the eruption first appeared. We first saw her in Dec. 1, 1942, at which time she gave a strongly positive reaction to a patch test with nail polish. The eruption cleared rapidly when it was treated with calamine lotion and contact with nail polish was avoided.

CASE 4.—A white stenographer aged 32 was referred to us on Feb. 3, 1943 by an ophthalmologist, with a diagnosis of rosacea keratitis. The patient complained of excessive lacrimation, itching of the eyelids and a rash on her face. The eruption had been present for two years but had recently become worse. The excessive lacrimation had started about one month previously and had not been relieved by treatment. Examination showed a typical rosacea of the face and a diffuse vesiculation of the chin suggestive of a contact dermatitis. Rosacea keratitis, conjunctivitis and excessive lacrimation were also present. Patch tests with the patient's cosmetics all elicited negative reactions except that with the nail polish, which produced a 1 plus positive reaction. The patient stopped wearing nail polish, and the lacrimation immediately subsided and the conjunctivitis improved. The rosacea was not affected and was treated later. When the eyes had cleared, the patient was asked to resume the wearing of nail polish. The excessive lacrimation and conjunctivitis reappeared, without affecting the eyelids externally.

CASE 5.—A white housewife aged 41 had hay fever during the fall months and several attacks of a severe oozing eruption on the backs of the hands. At least four attacks appeared during the past year. The duration of the attacks varied from two weeks to two months. The present attack was of five weeks' duration. This patient had been treated during each attack by a different physician and had been told that she had an "eczema." Elimination diets and local therapy usually had little effect on the eruption. We saw the patient on Nov. 12, 1942. The backs of both hands were involved with circumscribed erythematous weeping patches such as usually are seen in so-called nummular eczema. The patient was given patch tests with numerous suspected substances, but only nail polish produced a positive reaction. The eruption cleared in two weeks after discontinuance of the wearing of nail polish and application of calamine lotion locally. There have been no recurrences.

CASE 6.—A white telephone operator 22 years of age was first seen by us in April 1942, complaining of an eruption about her left ear. She gave a history of having had two previous attacks about three months apart. Each attack cleared when she was on a vacation away from work. While at work, the patient constantly wore an earphone that fit over her left ear. She could not hear well with her right ear and therefore did not try to wear the instrument on her right side. She was told that she was sensitive to the earphone and was advised to change occupations. On examination the patient presented a circumscribed area of erythematous, weeping eruption just anterior to her left ear. The ear itself was free of eruption. When removing her earphone the patient would put her fingers beneath the instrument, and her nails would come into contact with the areas of the skin involved. She applied nail polish daily. Patch tests with scrapings from the earphone elicited no reactions; however, reactions to patches of nail polish were strongly positive. The patient was advised to stop wearing nail polish. Her eruption disappeared within three weeks. There has been no recurrence during the past year.

Fig. 2.—Unilateral diffuse nail polish dermatitis of the upper and lower eyelids.

CASE 7.—A white housewife aged 42, first seen on July 6, 1943, complained chiefly of a severe itching of the vulva and of the left side of her neck. The eruption had been present over a year, and the patient had received various treatments for "eczema" and pruritus

vulvae. The physical examination revealed normal conditions except for a subacute dermatitis on the left side of the neck and on the right labium majus. The patient had worn nail polish almost constantly for many years. Patch tests with the nail lacquer gave a strongly positive reaction. The eruption cleared within three weeks, only to return four weeks later, after the wearing of nail polish was resumed against our advice. The eruption and pruritus cleared when the patient again stopped wearing nail polish.

RÉSUMÉ OF THE LITERATURE

The increasing number of patients seen with contact eczema due to nail polish caused us to become interested in trying to identify the offending agent in nail polish. Ellis and Kirby-Smith [2] have suggested that the most important factors in nail lacquer dermatitis are the clear lacquer and the dyes. They believe that a patient sensitized to one brand of nail polish at times may use

Fig. 3.—Nail polish dermatitis. The patient had a habit of biting her finger nails.

with impunity another brand or the same brand if it contains a different dye. Palmer's [3a] experience has been exactly the opposite. He expressed the belief that some ingredients of the lacquer itself and not the dyes are the offending agents. He suspected the newer synthetic resins or glycol esters to be the contact irritants. Simon [4] in his recent article reported that all of his patients were sensitive to a formaldehyde-sulfonamide resin.

Little information can be found in the medical literature concerning nail lacquers and the nature of their components. The usual nail polish is composed of a body, a plasticizer (such as synthetic resin), a solvent, a dye and a perfume. Theoretically any of these should be a likely irritant for a hypersensitive person. The solvents, plasticizers, dyes and perfumes are so numerous

Fig. 4.—Nail polish dermatitis. No other areas of the skin were involved.

that the possible combinations are almost unlimited.[3]

PATCH TESTS

For patch tests we chose seven brands of nail polish, each brand including some of the colorless and some of the colored lacquers. A total of twenty-nine different lacquers were used for each individual patch test. Besides these variations each patient was tested with the special lacquer that she was using.

Of 30 patients studied, 2 were sensitive to all the brands of nail polish, apparently being sensitive to the lacquer. Eight were sensitive to all except two or more colorless polishes; some colorless and all colored polishes elicited a positive reaction. Four patients reacted both to some of the colored and to some of the colorless

Fig. 5.—Auricular contact eczema due to sensitivity to nail polish.

2. Ellis, F. A., and Kirby-Smith, H.: Contact Dermatitis Due to Nail Polish, J. A. M. A. **116**:45 (Jan. 4) 1941.

3. (*a*) Palmer, R. B.: Dermatitis from Nail Lacquer, Arch. Dermat. & Syph. **44**:13 (July) 1941. (*b*) Osborne, E. D.; Jordon, J. W., and Campbell, P. C., Jr.: Dermatitis Venenata Due to Nail Lacquer, ibid. **44**:604 (Oct.) 1941.

4. Simon, F. A.: Nail Polish Eczema, South. M. J. **36**:157 (Feb.) 1943.

polishes but did not react to others. One patient gave a positive reaction only to two brands of colorless nail polish and a negative reaction to all the others. Nine patients gave a positive reaction to all but one of the colorless polishes. One patient gave a negative reaction to all colorless polishes but a positive reaction to all those containing a dye. Four patients were sensitive to one colored polish only and insensitive to all other brands. In these 4 patients the dye apparently was the sole cause of the dermatitis. One patient was sensitive to two brands of colored polish but gave negative reactions to all the other brands.

Fig. 6.—Nail polish dermatitis in a telephone operator. Contact was made when the earphone was fitted and removed.

In order to evaluate the patch tests, patients were allowed to wear the brands that elicited negative reactions. None showed any recurrence. A few had recurrences when they tried to wear some brand to which they gave a positive reaction. These patients voluntarily chose a brand they had not used when the first eruption appeared.

One patient who wore without ill effects a nail polish to which she gave a negative reaction was told to buy a colorless polish of the same brand. She returned in a few days with a recurrence of the dermatitis, and a patch test with the nail polish she was wearing elicited a positive reaction. The same brand and kind of nail polish we tested with previously produced a negative reaction. This suggests that the ingredients, including most likely the solvents, vary from time to time in the standard nail lacquers.

Each of the firms manufacturing the brands of nail polish used for the patch tests was requested to send samples of ingredients used in the manufacture of its lacquer in order to make our patch testing possible.

The synthetic resin elicited positive reactions in 2 of the 30 patients tested. One of these patients was sensitive to all but one colorless polish; the other, to all but two brands of colorless polish. The nitrocellulose elicited a positive reaction in 9 patients. Two of them were sensitive to all brands of nail polish. Seven of them reacted negatively to one or more of the brands of colorless polish and positively to all the rest. One or more of the solvents elicited a positive reaction in 20 patients.

Four of our patients gave a positive reaction to only one brand of colored polish and 1 patient was sensitive to two brands of colored polish. The reactions to all other polishes were negative. These patients failed to give a positive reaction to any of the components of nail polish. The dye alone was the probable offending agent. None of the patients tested gave a positive reaction to the camphor plasticizer, ethyl acetate, butyl acetate or butyl alcohol.

Fig. 7.—Contact dermatitis on the dorsum of the hand due to nail polish. When first seen the eruption was weeping.

COMMENT

The dermatitis produced by nail polish consists of a low grade erythema and scaling. Eight per cent of our patients showed vesiculation and weeping, especially when the chin and perioral areas were involved.

Young high school girls who have a habit of biting their nails may present a picture which

at first suggests a cheilitis from lipstick or toothpaste. Some girls wear nail polish only on week ends and give a history of recurrent attacks.

The dermatitis usually appears in patches, although diffuse involvement may be encountered. The great majority of patients will give a positive reaction to patch tests. A few patients seem to have a localized hypersensitivity and do not react to the patches on the back or on the forearms. One patient presented a small patch of dermatitis on her right upper eyelid; reactions to the patch tests were negative. The eruption cleared when she discontinued wearing nail polish. Apparently a localized hypersensitivity may be present, and one should apply the nail polish directly over the sensitized areas when testing. Recurrence of the dermatitis when wearing of the nail polish was resumed was sufficient proof in our case.

Two patients gave a delayed reaction twenty-four hours after the test patches were removed.

The results of our patch tests seem to indicate that usually some brand of nail polish, especially a colorless polish, may be found that the patient may wear with impunity. The sealfast and overcoat types of colorless nail lacquer seemed to produce the least number of positive reactions. These preparations are not true colorless lacquers but are preparations which are applied over the original coat of polish to increase the durability. When applied directly to the nails they give a coating similar to that of true colorless lacquer.

Plasticizers, solvents and any other ingredients apparently can be the offending agents. These may periodically differ in the same brands because of substitutions by manufacturers. The patient who insists on wearing nail polish should be tested with several brands of both colored and colorless polish. Most likely some brand and kind will be found that the patient will tolerate.

The same brand and kind, however, may become an offending agent if the firm in later shipments substitutes certain ingredients to which the patient may be sensitive. Most of our patients tested gave negative reactions to one or more of the colorless nail lacquers. This coincides with the observation that the solvents rather than the synthetic resins or the nitrocellulose are the offending agents. The nitrocellulose and the no. 10 solvent (benzine) in the strength received from the firm were primary irritants, and a 10 per cent solution was prepared for patch tests. Ten control patients gave negative reactions to all tests with the nail polish and its components.

SUMMARY

Nail polish is a frequent cause of dermatitis of the eyelids among women. A patchy dermatitis of the upper eyelids is the most frequent lesion. The solvents are the usual offending agents.

Most patients are able to wear some brand of colorless nail polish. Patch tests are of doubtful value for some patients, and clinical observation is of greater importance.

514 Doctors Building.

CLINICAL OBSERVATIONS ON THE USE OF SOAPS CONTAINING AN ABRASIVE

ROY L. KILE, M.D.
Surgeon (R), United States Public Health Service
AND
ASHTON L. WELSH, M.D.
CINCINNATI

Soaps containing an abrasive were developed primarily to aid in removing grease and other heavy dirt from the skin. These products have been made with many different abrasives, such as coarse sand, finely pulverized pumice, bentonite, sawdust and oatmeal. There is evidence that the coarse, hard materials (sand) may damage the skin if used repeatedly, while oatmeal and similar soft substances apparently add little to the mechanical cleansing action of the soap. Between these two extremes lie materials sufficiently hard to enhance cleansing by abrasion yet so finely ground that they are safe for the skin.

There are relatively few references in the literature to the effects of abrasive soaps on the skin. In a recent review, Klauder, Gross and Brown[1] reported on the examination of some forty-four brands of mechanics' soaps and stated (page 342): "Most writers advise against the use of abrasive (grit soaps)." As far as the coarser abrasive soaps are concerned, this conclusion is correct. There are cases, however, in which use of a soap containing a fine abrasive may be advised. Becker and Obermayer,[2] for example, in a discussion of the treatment of acne, stated: "The skin in comedo acne usually tolerates any reasonable amount of mechanical cleansing so that tincture of green soap or a soap containing pumice stone in powdered form (Lava soap) can be used to advantage."

In our practice, we have recommended the use of a soap containing a fine abrasive to patients with oily skins and acne. The rationale is that soap containing an abrasive is more effective in removing sebum from the surface of the skin and enhances the mild keratolytic action of soap by mechanically scouring away the hypertrophic stratum corneum usually present in the follicular orifices in these conditions. The results of this method of cleansing the skin for a small series of patients were so promising that an investigation of the effect of using a soap containing an abrasive was made on a larger group of subjects.

The procedure in this experiment was similar to that used in a study of superfatted soaps.[3] Fifty young women (nurses) were divided without selection into two groups. At the initial examination, the nurses were classified as to type of complexion and the oiliness of their skins. One group was given plain bars of a hardwater soap (100 per cent coconut oil soap), while the other was supplied with plain bars of a soap made from the same oil to which had been added 25 per cent of finely powdered pumice. The appearance of the two soaps was entirely different: The abrasive soap was dark gray, while the control soap was almost white.

The soaps were used for a period of two weeks. At the end of this time, the group which had been using the abrasive soap was given the control soap while the other group was provided with the soap containing pumice.

Examinations of the subjects were made each week to determine whether changes in the appearance of the skin could be observed. The face, hands and arms were observed for any signs of irritation, for the presence of comedos or acne pustules and for the general condition of oiliness or dryness of the skin. Each subject was also questioned with regard to discomfort experienced immediately after washing and to the condition of the skin (oiliness and acne). At the conclusion of the second experimental period, each subject was asked to give her preference of the two soaps, based on the effect they produced on the skin. Of the 50 subjects who began the experiment, 39 completed the test, using each soap for a period of two weeks. The results are given in table 1.

The soap containing the abrasive caused significantly more reduction in oiliness of the skin than did the control soap. Most subjects found no difference in the mildness of the two soaps; however, discomfort after use was experienced

1. Klauder, J. V.; Gross, E. R., and Brown, H.: Prevention of Industrial Dermatitis with Reference to Protective Hand Creams, Soap and the Harmful Role of Some Cleansing Agents, Arch. Dermat. & Syph. **41**: 331 (Feb.) 1940.

2. Becker, S. W., and Obermayer, M. E.: Modern Dermatology and Syphilology, Philadelphia, J. B. Lippincott Company, 1940, p. 517.

3. Kile, R. L.: Clinical Evaluation of a Superfatted Soap, Arch. Dermat. & Syph. **45**:377 (Feb.) 1942.

in a slightly, but not significantly, greater number of cases with the abrasive soap (8 vs. 5). Likewise, with most subjects there was no difference in the effects of the two soaps on acne. It should be pointed out, however, that of the 30 subjects for whom no difference in this effect of the two soaps was recorded only 13 had acne. Of those whose acne showed improvement, more improved while using the abrasive soap.

TABLE 1.—*Results for 39 Subjects Using an All Coconut Oil Soap With and Without an Abrasive*

Subjects' Appraisal of the Soap	Non-abrasive Soap	Abrasive Soap	No Difference Noticed
Discomfort experienced	5	8	26
Decreased oiliness of the skin	12	27	
Improvement in acne *	2	7	13
Preference:			
Subjects with oily skin (20)	5	12	3
Subjects with normal skin (10)	2	3	5
Subjects with dry skin (9)	5	3	1

* Only subjects with apparent acne were included.

Most toilet soaps are not hard water soaps (soaps made entirely from coconut oil) but are made according to formulas in which approximately 80 per cent of the fat is tallow and 20 per cent is coconut oil. It seemed interesting, therefore, to test the action of a fine abrasive incorporated in a soap of this kind.

A second series of tests was made among students of a military school, where a greater number of subjects with acne were available.

The cadets were of high school age and were housed in two groups of barracks; hence segregation into two experimental groups was convenient. The test soaps, both of a formula typical of fine toilet soaps, with one of them containing 25 per cent of fine pumice, were the only ones available to the cadets both in the shower rooms and in the lavatories. The discipline and program of such an institution make it nearly ideal for this type of experiment, since each boy takes at least one shower each day and washes his face regularly before meals. The procedure for this series of subjects was the same as for the first except that the experimental periods were extended to one month. Careful examinations of the boys were made at weekly intervals, with attention being paid to the oiliness of the skin and the presence of comedos, pustules and other cutaneous lesions.

The results of this series of tests are given in table 2 for the 66 subjects who completed both experimental periods. In this series, both a reduction in oiliness of the skin and an improvement in acne were more often seen during the period when the abrasive soap was used than when the nonabrasive soap was used.

Besides the difference in kind of soap used, the more definite results of this series, as compared with those of the first, may be explained by the higher incidence of acne and seborrhea among the cadets and the greater regularity and frequency with which they used the soaps.

COMMENT

These tests were all made during the winter season when indoor humidity is low, sebaceous and sweat secretions are diminished and a mild dermatitis of exposed parts is common. The weather can greatly influence the results of such tests. For example, a soap used during a wave of zero weather might be judged less mild than one used during a period of warmer weather even though no real difference between the soaps existed. To aid in interpretation of the results, a record was kept of the average daily temperature and humidity during each test period. Apparent discrepancies in the data can be at least partially explained on the basis of changing weather conditions. However, the tests were conducted so as to compensate for such variables as the weather by having half the subjects use each soap during the two experimental periods. The exceptions or inconsistencies are thus balanced, and the data become more reliable.

From the results of these tests, it is apparent that washing with a soap containing a fine abrasive will decrease oiliness of the skin. Patients with seborrhea and acne, whose skins are well supplied with sebum, are benefited by and show a definite preference for this kind of soap. The use of soaps containing a fine abrasive may, therefore, be of value in the treatment of conditions associated with oiliness of the skin.

TABLE 2.—*Results for 66 Subjects Using a Low Coconut Oil Soap With and One Without an Abrasive*

Subjects' Appraisal of the Soap	Non-abrasive Soap	Abrasive Soap	No Difference Noticed
Discomfort experienced	2	7	57
Decreased oiliness of the skin	11	42	13
Improvement in acne *	4	30	12

* Only subjects with apparent acne were included.

SUMMARY

In controlled tests the regular use of soaps containing 25 per cent of fine pumice was found to decrease the oiliness of the skin and to produce improvement in patients with acne.

The beneficial effect of pumice was apparent when added as an abrasive to soap made entirely of coconut oil and an alkali (hard water soap) or to soap made according to a typical toilet soap formula (the fats being 80 per cent tallow and 20 per cent coconut oil).

No significant difference was observed between the degree of discomfort produced by the abrasive soap and that produced by the control soap used.

NEVUS STRIATUS SYMMETRICUS UNGUIS

REPORT OF A CASE WITH INVOLVEMENT OF THUMBS AND LITTLE FINGERS

EDWARD A. OLIVER, M.D., AND SAMUEL M. BLUEFARB, M.D.
CHICAGO

Nevus of the nail plates is rare. A case is therefore reported here.

REPORT OF CASE

R. B., a 12 year old girl, was referred to the Northwestern University Dermatologic Clinic from the pediatric clinic because of the condition of her nails. Both thumbs show an atrophic ridge which is depressed below the surface of the nails. The ridge is present in the center of the nail and extends from the posterior nail fold to the free end of the nail surface. The fifth finger of each hand shows parallel dark lines occurring in the center of the nail plate. There are no signs of inflammation. The toe nails are not involved. This disease appeared at the age of 6 years. The malformation is not present in the parents or grandparents. There are no cutaneous manifestations or other abnormalities.

The Wassermann and Kahn reactions of the blood were negative. The hemoglobin content was 13.6 Gm.

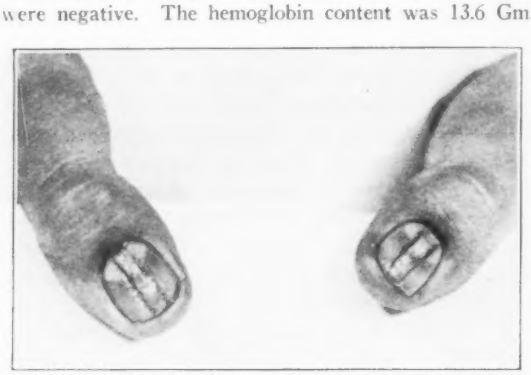

Fig. 1.—Atrophic depressed central ridge of the thumb nails.

Red blood cells numbered 5,140,000 and white cells 6,200, with polymorphonuclear leukocytes 58 per cent, lymphocytes 39 per cent, eosinophils 1 per cent and basophils 1 per cent. The basal metabolic rate was —18 per cent. Because of this low rate the patient has been receiving thyroid (¼ grain [0.015 Gm.] daily).

COMMENT

The question arises whether trauma to the nail bed can produce a disease of this type. Because of the bilateral and symmetric involvement, absence of signs of inflammation, absence of history of trauma, appearance at the age of 6 years and duration for six years without improvement, we feel that the lesion is a nevus.

The only case of nevus of the nail plates in the literature is one presented by Oppenheim and Cohen [1] at the Chicago Dermatological Society. In that case both thumbs were involved. This disease is not mentioned in Heller's monograph on diseases of the nails [2] or in Pardo Castelló's textbook on such diseases.[3]

Another interesting feature of this case is that when the child was presented before the Chicago Dermatological Society [4] Dr. O. S. Ormsby stated that about thirteen years ago, when the patient's mother was pregnant, he treated her for a recalcitrant eruption of the palms.

Fig. 2.—Darkened parallel lines on the nails of the little fingers. The nails of the other fingers are normal.

SUMMARY

A 12 year old girl with nevus of the nail plates showed bilateral and symmetric involvement of the thumbs and little fingers.

55 East Washington Street.
30 North Michigan Avenue.

From the Department of Dermatology, Northwestern University Medical School, Edward A. Oliver, M.D., Chairman.

1. Oppenheim, M., and Cohen, D.: Nevus Symmetricus of the Thumbs, Arch. Dermat. & Syph. **45**: 253 (Jan.) 1942.

2. Heller: Die Krankheiten der Nagel, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1922, vol. 13, p. 2.

3. Pardo Castelló, V.: Diseases of the Nails, Springfield, Ill., Charles C Thomas, Publisher, 1941.

4. Oliver, E. A., and Bluefarb, S. M.: Case Presented at the meeting of the Chicago Dermatological Society, October 1943, to be published.

DERMATITIS DUE TO SHOES

CLARENCE SHAW, M.D.
CHATTANOOGA, TENN.

Dermatitis of the feet due to shoes, although long recognized, has been considered a comparatively rare condition. Niles [1] reported 2 cases, Lord and Wolfe [2] 2 cases, Lewis [3] 2 cases, Anderson and Ayres [4] 1 case, Burgess [5] 5 cases and Beerman [6] 2 cases. This report is based on observations in 22 cases of the disease encountered in practice in the past three years, which indicates that it is much more frequently seen, at least in Chattanooga, than is ordinarily supposed. In every instance the diagnosis was confirmed by positive reactions to patch tests with the materials from which the shoes were made. New methods and materials employed in the preparation and manufacture of shoes may be in part responsible for the apparent increase in the incidence of this eruption. Yet it is believed that the diagnosis is frequently missed, since the first impression of a vesicular dermatitis of the feet is that the patient has dermatophytosis.

Clinically, it is frequently possible to differentiate contact dermatitis of the feet due to shoes from a fungus infection. Niles [1] pointed out that the salient features of shoe dermatitis are:

1. The appearance of the eruption shortly after wearing new or freshly dyed shoes and its disappearance after changing the shoes. 2. A positive patch test with the suspected shoe leather [or lining materials]. 3. The failure to demonstrate fungi by microscopic examination or cultures and the lack of effect or harmful action of fungicidal therapy. 4. The relatively greater itching: the severity of the itching is out of proportion to that of the eruption and may be present several days before the eruption appears. 5. The lack of involvement of the interspaces of the toes. 6. The sharply outlined border of the dermatitis. 7. The predilection for the great toes and the dorsa of the toes and feet instead of for the little toes and plantar surfaces and sides of the feet as in dermatophytosis (the eruption in shoe leather dermatitis is usually most marked on the dorsa of the great toes and becomes progressively less on the smaller toes and may be entirely absent on the little toes). 8. The involvement of the ankles when high shoes are worn.

1. Niles, H. D.: Dermatitis Due to Shoe Leather, J. A. M. A. **110**:363 (Jan. 29) 1938.
2. Lord, L. S., and Wolfe, W. D.: Dermatitis Due to Shoe Leather and Shoe Polish, Arch. Dermat. & Syph. **38**:435 (Sept.) 1938.
3. Lewis, G. M.: Dermatitis Venenata Due to Shoe Leather, Arch. Dermat. & Syph. **24**:601 (Oct.) 1931.
4. Anderson, N. P., and Ayres, S., Jr.: Dermatitis Venenata from Shoe Leather, J. A. M. A. **99**:25 (July 2) 1932.
5. Burgess, J. F.: Contact Dermatitis of the Feet, Canad. M. A. J. **47**:2229 (July) 1942.
6. Beerman, H.: Factors Involved in Leather Dermatitis, Arch. Dermat. & Syph. **29**:671 (May) 1934.

REPORT OF CASES

The following cases are representative.

CASE 1.—W. D. N., a 24 year old woman, stated that she had had an itching eruption on the feet for two months and that it had been treated for ringworm without benefit. The eruption started with vesicles on the dorsa of the toes, which spread to involve the entire feet and ankles. The skin of the soles and of the dorsa of the feet up to the ankles was studded with small vesicles and papules, some of which were scaling. There were no lesions between the toes. Patch tests with materials from a pair of canvas-topped, rubber-soled tennis shoes elicited strongly positive reactions. Fractional roentgen therapy and application of soothing preparations brought about a prompt recovery.

CASE 2.—H. G., a 15 year old boy, was first seen on Oct. 31, 1941, with a pruritic eruption of two weeks' duration. Vesicles and bullae were noted on the sides of both feet and ankles. The toes and soles were not involved. Microscopic examination of the tops of vesicles did not reveal fungi. On the face were erythematous crusted patches which resembled impetigo. Soothing lotions for the feet and 5 per cent sulfathiazole cream for the face brought about considerable improvement in the next two weeks. He returned again on May 10, 1942, with a recurrence of the dermatitis on the ankles which was thought to be dermatitis venenata from socks and which cleared when he wore white socks. He was seen next on December 5, with new vesicles on the sides of the ankles of a week's duration. He stated that he had purchased new shoes one month before, after which the eruption had disappeared entirely, only to recur one week before his visit. Reactions to patch tests with a common brand of black shoe polish and brown shoe polish were positive. A patch test with black shoe dye elicited a negative reaction. Since he has stopped shining his shoes, the eruption has not recurred.

CASE 3.—C. D., an 18 year old student nurse, complained of an eruption which had been present on her feet for about three years. She had received considerable treatment for ringworm, including roentgen therapy, without benefit. She presented a vesicular eruption involving the sides of the feet and the dorsa and tips of the toes. There were no lesions between the toes. Microscopic examination of the tops of vesicles did not reveal the presence of fungi. Patch tests with beige and with brown shoe leather elicited positive reactions, and tests with linings of brown and of beige shoes and leather from black and from white shoes elicited negative reactions. She was advised to wear either black or white shoes, and since then her feet have remained clear.

CASE 4.—G. H. B., a 42 year old woman, complained of an intensely pruritic eruption on her feet at intervals for the past two years. At the onset she had received ten roentgen treatments, with temporary benefit. Just before she was first seen she had received from another physician eight additional roentgen treatments together with local treatment for ringworm, without permanent benefit. She presented vesicles with erythematous scaling patches on the tips and dorsa of the toes, on the soles and on the insteps. Fungi could not be found on microscopic examination. She recalled that just prior to the onset of the eruption she had dyed a pair of shoes brown, and she had been wearing these shoes frequently while at home. A patch test with the leather of the shoes which had been dyed brown elicited a positive reaction. After she discarded these shoes, her feet remained well.

CASE 5.—D. S., a 16 year old boy, presented an itching eruption of the feet of about one year's duration which had not responded to treatment for ringworm. There were erythema, vesiculation and scaling on the dorsa and tips of the toes, the soles and the sides and backs of the heels. The interspaces between the toes were clear. A patch test with the canvas lining from his shoes elicited a positive reaction, while the reaction to a patch test with the upper leather was negative. The patient was advised to purchase a new pair of shoes. He returned in one week stating that his feet were no better. From questioning him it was found that he had purchased the same brand of shoes as the ones with which the positive reaction had been obtained. This time he was advised to purchase a different brand of shoes, which he did; since then the eruption has disappeared.

CASE 6.—B. E. S., a 5 year old boy, was brought to me by his mother, who stated that the child had been troubled with itching feet for several months. He showed diffuse erythema and scaling across both soles. There was no eruption between the toes, and fungi could not be found in scrapings from the soles. Patch tests with the canvas lining of two pairs of shoes and with felt slippers elicited strongly positive reactions. The reactions to tests with the insoles of these shoes and with the upper leather and lining of a pair of moccasins were negative. With the purchase of a pair of new shoes and new slippers of a different make, his dermatitis disappeared.

CASE 7.—M. H., a 29 year old woman, was first seen on March 29, 1940, complaining of an itching eruption on the feet of at least ten year's duration which was present only in warm weather. She had been given roentgen therapy and fungicidal preparations, without benefit. There were groups of vesicles and scales on the sides of both feet. Lesions were not seen between the toes, and fungi could not be found microscopically. Soothing medication was given, with some relief. She was again seen, on March 13, 1942, with a recurrence of the itching on her feet. At this time the reaction to a patch test with leather heel grips was strongly positive. Patch tests with insole leather and lining leather elicited negative reactions. She was advised to bring in all of her shoes for patch tests. They revealed positive reactions to the leather lining material in four other pairs of shoes, all of which were of different colors and brands. The linings were removed by a shoemaker, who replaced them with canvas, and since then her dermatitis has completely disappeared, and the skin has remained clear to date.

CASE 8.—R. P. T., a 28 year old air line hostess, complained of an eruption on her feet of several weeks' duration which had not improved with self treatment for ringworm. She stated that she had had a similar eruption the previous summer, which cleared in the fall. Just before the onset of the original attack she purchased a pair of new shoes, which she wore only during the summer. During the past month she had resumed the wearing of these shoes. She presented erythema, edema, vesiculation, oozing and crusting in a linear band across the instep and sides of both feet just where the top border of the shoes touched the skin. The reaction to a patch test with the binding tape taken from the border of the shoes was strongly positive. When she discarded these shoes, the eruption promptly cleared with soothing medication.

CASE 9.—R. M., a 12 year old boy, complained of an intensely pruritic eruption on the feet of several months' duration. He had been given much local treatment for fungous infection, without benefit. There were erythema, vesiculation and scaling on the dorsa of the toes, sides of the feet and soles. Patch tests with the felt lining from a pair of moccasins gave a positive reaction. When he discarded the moccasins, the dermatitis disappeared.

CASE 10.—O. L., a 29 year old woman, complained of an itching eruption of two weeks' duration involving both feet. One year previously she had been treated with roentgen therapy for a similar condition. Across the insteps, where the borders of the shoes touched her feet, she presented a linear band of erythema, edema, vesiculation, oozing and crusting. She also showed erythema and lichenification at the bends of both elbows and on the upper eyelids. Within two days there developed a severe constitutional reaction, with temperature of 104 F., chills, nausea, vomiting and generalized itching. At this time she presented a toxic dermatitis involving the arms, legs, back and face. When the toxic dermatitis subsided, patch tests with red shoe leather and the lining of the red shoes gave strongly positive reactions. The reactions to patch tests with brown shoes were negative. She recalled that she had purchased the red shoes just prior to the onset of the dermatitis, a year ago, and had not worn them until just before the present outbreak. When she discarded the red shoes, both the local and the constitutional symptoms disappeared.

COMMENT

The manufacture of shoes is a complicated process, which has been recently and well described by Beerman,[6] Lewis [5] and Schwartz and Tulipan.[7] In addition to the many possible sensitizing chemicals which are used in the processing of leather itself, the lining canvas in shoes usually is impregnated with antimildew compounds. There are many such substances, any of which may be used in shoes. They consist chiefly of chlorophenols, with various trade names. Mercury compounds are used in many forms, such as phenylmercuric nitrate and phenylmercuric lactate. Copper compounds are used also, in the form of the naphthenate, carbonate, palmiteoleate and fluoride. Salicylanilide and hosts of other chemicals are used. These substances are primary cutaneous irritants in strong

7. Schwartz, L., and Tulipan, L.: Occupational Diseases of the Skin, Philadelphia, Lea & Febiger, 1939.

solutions, but they are used on fabrics in dilutions of 1 per cent or less; hence many of them can be safely used, although even in weak dilutions they may act as sensitizers.[8]

It is also possible that the glue which is used to approximate the insole to the welt and the inner lining to the upper leather may produce sensitization dermatitis. Since each manufacturer has his own secret treatment for his product, it is frequently possible to find a practical solution to the problem by purchasing a different brand of shoes. In 1 case, however, leather linings from four different brands of shoes elicited positive reactions, which necessitated the substitution of plain canvas as an inner lining in all of this patient's shoes.

It is apparent that dyed shoes (4 cases) are a frequent cause of contact dermatitis of the feet and that shoe polish (1 case) may also cause sensitization. Dyed felt house slippers (1 case), canvas tennis shoes (1 case) and trimmings (1 case) must also be considered as possible causes of contact dermatitis due to footwear. Top leather was responsible in 7 cases, lining leather in 3 cases, canvas lining in 5 cases and felt lining in 2 cases. It was also noted that in some instances only one foot was affected at the time of the examination. In 1 patient there was a severe systemic reaction with a generalized sensitization dermatitis presumably due to absorption from the feet of the toxic substance in red upper leather.

In none of the patients was associated dermatophytosis found. Microscopic examination of tops of vesicles and of scales was performed in each case, and the presence of fungi was not demonstrated. This observation is in contrast to the experience of Beerman [6] and others, who have stated the belief that fungous infections of the feet may predispose to the occurrence of sensitization dermatitis. Although it is conceded that vesicular mycotic infection identifies the patient as epidermally sensitized and may make the skin more susceptible to other sensitizers, it is apparent from this series of cases that dermatophytosis is not a common predisposing factor in dermatitis due to shoes. Twelve of the 22 patients had been treated elsewhere for ringworm before the correct diagnosis was established.

Nelson [9] has recently reported on a group of soldiers with symmetric lividity of the feet which might possibly be confused with dermatitis due to shoes. The clinical picture in this entity differs in that there are bromhidrosis, hyperhidrosis and well demarcated erythematous plaques involving both soles, with sogginess and thickening but without true vesiculation.

Since manufacturers of shoes have been forced to use substitute materials with the advent of the war, it is to be expected that new causes of sensitization dermatitis from footwear will be encountered. If such is the case, the clinical picture and the results of patch tests should be the same as in cases which have been previously reported.

SUMMARY AND CONCLUSIONS

Since 22 cases of contact dermatitis of the feet proved by patch tests to be due to shoes have been encountered in three years, it appears that dermatitis due to footwear is more common than is ordinarily believed, at least in Chattanooga.

The eruption is to be differentiated from dermatophytosis, with which it is frequently confused, by the history, the clinical appearance, the positive reactions to patch tests with material from the shoes and the absence of fungi. Associated dermatophytosis could not be demonstrated by microscopic examination for fungi in any of these cases. Symmetric lividity of the soles must also be considered in the differential diagnosis.

Compounds used in the manufacture of leather, antimildew preparations impregnated in the lining, glue, felt, canvas and synthetic substitute materials employed since the onset of the war are all possible sensitizers.

Once the diagnosis is established with positive reactions to patch tests, the patient may usually be relieved by changing the brand of shoes.

Provident Building.

8. Schwartz, L.: Personal communication to the author.

9. Nelson, L. M.: Symmetric Lividity of the Soles, Arch. Dermat. & Syph. **47**:822 (July) 1943.

AMERICAN (MUCOCUTANEOUS) LEISHMANIASIS

OBSERVATIONS

OSWALDO G. COSTA, M.D.
BELLO HORIZONTE, BRAZIL

UNUSUAL LOCATION OF INITIAL LESION

The initial lesions of American leishmaniasis occur generally on exposed surfaces and may be found on the face, ears, forearms and legs, in order of frequency. Lesions on the covered parts of the body are less frequent but may be encountered in rural laborers, who work naked from the waist up or wear thin clothes. In my case, two typical lesions of leishmaniasis were observed on the upper part of the back.

J. D. F., aged 24, a white Brazilian farmer residing at Mesquita (state of Minas Geraes), stated that three months ago there appeared in the middle of the right side of the back two small itchy papules which later ulcerated and assumed their present aspect. On dermatologic examination, two small ulcers were seen in the middle of the right side of the back. One of these was small and the other larger, the lesions measuring 1 by 0.50 and 3 by 4 cm. respectively, and they lay side by side. They were oval and painful, with well defined raised edges. The floor of the ulcers was granular and covered with a purulent secretion. There was a peripheral cyanotic halo. Leishmania braziliensis was found in both ulcers on microscopic examination. There was no satellite ganglionic reaction.

The differential diagnosis must be made between American leishmaniasis and ulcerating nodular syphilids, sporotrichosis and chancroid.

NASAL POLYP

The nasal polyp of leishmaniasis was described for the first time by Mangabeira-Albernaz [1] and constitutes a rare clinical manifestation of this disease. In Brazil, where leishmaniasis is extremely prevalent, only 14 cases had been observed: 4 cases by Mangabeira-Albernaz,[1] 2 by Rezende,[2] 2 by Moraes,[3] 3 by Ferreira,[4] 1 by de Cerqueira Falcão,[5] 1 by Coutinho [6] and 1 in the clinic of Fraga and Silva,[7] in Rio de Janeiro. This type of leishmaniotic polyp has not yet been recorded outside Brazil. Its clinical symptoms do not differ from those of other types of polyp. From what can be deduced from the description of the lesions in the Brazilian cases, they are tumors of varying dimensions from the size of a pea to that of a nut. The polyps may be single or multiple and localized in one or both nasal fossae, chiefly in the region of the septum. Their color may be dark pink, reddish or purplish red, and their consistency varies from fibrous to soft. The surface of the tumor may be smooth or lumpy, and the growths are always accompanied by leishmaniasis of the mucosa. The tumors are always pediculated. Their histologic characteristics are sui generis and differ from those of the usual forms of leishmaniasis and from those of syphilis and tuberculosis. My case is a typical example of leishmaniotic polyp, as Leishmania braziliensis was observed in material from the polyp and also in histologic preparations. Differential diagnosis must be made from other types of polyps. The treatment consists of ablation, with subsequent treatment of the leishmaniasis of the mucosa.

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1. Mangabeira-Albernaz, P.: (*a*) Contribution to the Pathogenesis of the Polypi of Leishmaniasis, Arch. internat. de laryng. **32**:139, 1926; (*b*) The Polypus of Leishmaniasis, Brasil-med. **42**:729, 1928.
2. Rezende, M. O.: The Polypus of Leishmaniasis, Boll. Soc. d. med. e cir. de São Paulo **6**:44, 1923.
3. Moraes, E., cited by Mangabeira-Albernaz.[1b]
4. Ferreira, A., cited by Mangabeira-Albernaz.[1b]
5. de Cerqueira Falcão, E.: The Nasal Polyp in Leismaniasis, Brasil-med. **49**:835, 1935.
6. Coutinho, B.: The Polypus of Leishmaniasis, An. Fac. de med. do Recife **2**:26, 1935.
7. Fraga, A., and Ramos e Silva, J.: Personal communication to the author.

T. P. S., aged 34, a Brazilian Negro farmer residing at Diamantina (State of Minas Geraes), was admitted to Dr. Antonio Aleixo's ward on Jan. 4, 1941. The patient stated that about twelve years ago lesions appeared on his left arm and were diagnosed by a physician as leishmaniasis. He was treated insufficiently with antimony and potassium tartrate. Later he suffered from leishmaniasis of the nasal-buccal-pharyngeal mucosa. Three years later he began to notice obstruction of the right nasal fossa and subsequently found that a small tumor was in that area.

Typical leishmaniotic vegetative growths were found on the mucosa of the nose and palate. The right nasal fossa was obstructed by a tumor, which could be brought outside the fossa by means of a forceps. When the tumor was removed it was found to be bosselated, of the size of a nut, pink and soft and slightly irregular in shape.

Fig. 1.—Initial lesions of American leishmaniasis on the back, an unusual location.

Fig. 2.—Nasal polyp, a rare manifestation of American leishmaniasis.

Histologic examination by Dr. Junqueira showed the polyp to be due to leishmaniasis. The Kahn reaction was negative. A roentgenogram of the lungs was normal. Roentgenologic and diascopic examination of the sinuses of the face revealed that they also were normal.

Polyp due to leishmaniasis constitutes a new and rare clinical manifestation of this disease, which up to the present has been encountered only in Brazil. Cases of this nature are rare, for this is the fifteenth recorded case in Brazil, where leishmaniasis is common.

CHEILITIS

Cheilitis due to leishmaniasis is rather infrequent, as is also the localization of the initial lesion on the labial mucosa. The differential diagnosis must be made between cheilitis, syphilis, blastomycosis, cancer and tuberculosis.

J. M. P., aged 20, a Brazilian Negro farmer residing at Theophilo Otoni (State of Minas Geraes), stated that about six months before he noticed a small lesion on the lower lip. It

increased in size until it attained its present dimensions. On examination the whole lower lip was seen to be much enlarged, and intense infiltration was noted on palpation. All the mucous surface of the lip was ulcerated and covered with a seropurulent secretion. The floor of the ulcer was granular and bled easily. There was no satellite ganglionic reaction. Outside the outer angle of the right eye there was a small ulcer covered with crusts.

Leishmania braziliensis was demonstrated in a histologic preparation. The Kahn reaction of the blood was negative.

PARONYCHIA LEISHMANIOTICA

Ungual lesions in American leishmaniasis are little known, for I have met with no record of them in the clasic works of Heller and Castello. I believe they

Fig. 3.—Cheilitis, an initial lesion of leishmaniasis.

Fig. 4.—Paronychia leishmaniotica.

have not yet been observed. My case represents an instance of typical leishmaniotic paronychia in a patient with typical lesions on the face and thorax. The periungual tissue must have been infected by autoinoculation in the act of scratching, as the lesions which existed on other parts of the skin were pruriginous.

REPORT OF A CASE

B. G. C., aged 30, a Brazilian Negro farmer living at Governador Valladares (State of Minas Geraes), stated that eight months ago there appeared on his face and chest an eruption which was diagnosed as leishmaniasis. Four months later he noticed inflammation around the nail of the right thumb. Physical examination showed that the patient was suffering from cutaneous leishmaniasis. All around the nail of the right thumb there was a painless ulcer with irregular floor and covered with a seropurulent secretion. The edges were not raised, and there was a slight peripheral cyanotic halo.

Leishmania braziliensis was demonstrated microscopically. The Kahn reaction of the blood was negative.

Rua Ceará 1691.

Clinical Notes

CONTACT DERMATITIS DUE TO "LEG MAKEUP"

FRANCIS A. ELLIS, M.D., BALTIMORE

A survey of the literature did not disclose any reports of contact dermatitis due to "leg makeup." A case is reported in which a woman had a dermatitis due to leg makeup and in which, with the cooperation of the manufacturer, the particular sensitizer was determined.

REPORT OF A CASE

A white woman aged 25 had used a leg makeup for three weeks, when an acute dermatitis suddenly developed. It extended from the middle of the thighs to the tops of the feet, and it appeared on the back and webs of the right hand. When she was first examined, the eruption was of four days' duration. It consisted of a moderately acute, erythematous, edematous, pruritic, confluent dermatitis. The correct diagnosis was easily made by the patient because of the history and the distribution of the eruption. Some edema of the legs developed. In about two weeks with palliative therapy the dermatitis disappeared, leaving some residual pigmentation. Six weeks after the eruption had subsided, tests were made with covered patches of the eight powders and with uncovered patches of the four liquids used in the leg makeup. Two days later a 2 plus reaction to the red powder was obtained. At this time covered patches of the four liquids were applied. They produced negative reactions.

The manufacturer of the leg makeup was cooperative in supplying samples and stated that "inasmuch as this is the second case of allergy amongst users of several thousand bottles sold this summer, we are planning to eliminate this particular ingredient." The dye is similar to the dye supplied with oleomargarine; that is, it is red when concentrated and yellow when diluted.

SUMMARY AND CONCLUSIONS

In case of dermatitis venenata due to leg makeup it was found that the patient was sensitive to one of the twelve ingredients, a red powder described by the manufacturer as "F D & C Yellow # 3." "It is sometimes known as A B Yellow (oil soluble). The chemical name is 1-phenylazo-2-naphthylamine."

Dr. Louis Schwartz, of the United States Public Health Service, stated that the "'F D & C Yellow # 3,' or oil-soluble A B, is listed as 22 in the Color Index and the chemical name is benzeneazo-β-naphthylamine. Oil yellow O B, no. 61 in the Color Index is also certified for 'F D & C' yellow and is orthotolueneazo-β-naphthylamine."

Considering the number of women who use leg makeup and the smaller number who acquire a dermatitis, one can conclude that the ingredients are poor sensitizers. The number of cases occurring in the future will prove or disprove this conclusion.

8 East Madison Street.

AN UNUSUAL EXAMPLE OF DERMATITIS DUE TO NAIL POLISH

JOHN F. MADDEN, M.D., ST. PAUL

Miss I. D., aged 20, consulted me on May 10, 1943, because of a dermatitis involving the face, ears and neck. The eruption had been present for one month and was most severe on the eyelids, the sides of the neck and the ears. The patient had used a new brand of nail polish for the preceding month, and this was thought to be the cause. She was advised to remove the polish and discontinue its use. Wet compresses and a bland paste were prescribed. The eruption had disappeared except for residual erythema and slight pigmentation by May 19, 1943. On that day a patch test with the nail polish was made on the flexor surface of the forearm. The next day, after approximately fifteen hours had passed, the patient returned because of an acute exacerbation of the eruption. There was an acute edematous weeping dermatitis at all of the previously affected sites as well as at the location of the test patch on the forearm. The patient was hospitalized for one week. Wet packs and later a bland paste were applied. The eruption healed in about two weeks.

The patient returned July 12, 1943, with a similar, although less severe, recurrence of the eruption on the previous sites, especially the eyelids and the neck. She said that she had not used nail polish at any time since she was last seen. After careful questioning she stated that a friend of hers had spent the week end with her and had slept with her on July 9, 10 and 11. This woman had worn nail polish. It seemed possible that during sleep the guest had passed her hands over the patient's face many times during a night. The patient was persuaded to have her friend repeat the visit from July 23 through 25 and wear the same brand of nail polish. This was done, and a similar recurrence of the patient's eruption appeared on July 26. The patient noticed that her eyelids and neck began to itch when she awoke after the first night of the visit. The eruption healed in a few days after the visitor departed.

The literature on dermatitis from nail polish has always, to my knowledge, described the patient as wearing the polish. This case shows that intimate physical contact, such as persons sleeping together during a limited period, can produce dermatitis from nail polish in a highly sensitive person even though that person does not wear nail polish.

1228 Lowry Medical Arts Building.

From the Ancker Hospital, St. Paul, and the Division of Dermatology and Syphilology, University of Minnesota, Dr. H. E. Michelson, Director.

HAIR LACQUER PAD DERMATITIS

LEON GINSBURG, M.D., AND FRANCIS A. ELLIS, M.D., BALTIMORE

During September and October 1943, 24 patients with dermatitis due to hair lacquer pads were observed by us. The history in each case was similar in essentials. All of the patients had used the same brand of hair lacquer pads for periods of approximately one or two weeks. The neck, ears and face were the sites usually involved. The patients complained of itching and redness in the occipital and mastoid regions and on the ears. Within a few days the eruption usually spread to involve the face and the periocular region. In a few patients the eruption spread to the shoulders, chest, arms and hands. The dermatitis in the early stage was erythematous and edematous, with subsequent crusting, but frank vesiculation was not observed. In about 60 per cent of the patients there were enlarged, tender, posterior cervical lymph nodes, and a few had a slight elevation of temperature. The eruption frequently lasted for several weeks before involution was complete. Inability to remove the lacquer completely from the hair may be the reason the dermatitis was protracted.

Nineteen of the patients were seen by one of us (L. G.). Patch tests were made on 9 of these, with five positive reactions. The four negative reactions may be explained by the fact that the tests were made on the thigh. It is possible that this area had not become sensitized at the time of testing. The other observer (F. A. E.) saw 5 patients, in each of whom patch tests with the lacquer pads elicited 1 to 3 plus reactions. Treatments consisted of application of compresses wet with dilute solution of aluminum acetate, bland ointments and liniments.

If the recommendations of Schwartz and associates[1] made with reference to the testing of new clothing finishes had been followed by the manufacturer, then the serious, acute dermatitis due to the hair lacquer pads would have been avoided. Schwartz[2] stated that the dermatitis was due to a combination of maleic anhydride and rosin.

1800 North Charles Street.

8 East Madison Street.

1. Schwartz, L.; Spolyar, L. W.; Gastineau, F. M.; Dalton, J. E.; Loveman, A. B.; Sulzberger, M. B.; Cope, E. P., and Baer, R. L.: An Outbreak of Dermatitis from New Resin Fabric Finishes, J. A. M. A. **115**:906 (Sept. 14) 1940.

2. Schwartz, L.: An Outbreak of Dermatitis from Hair Lacquer, Pub. Health Rep. **58**:1623 (Oct. 29) 1943.

REPLACEABLE HAGEDORN NEEDLE WITH HANDLE AS SCALPEL

ROBERT P. LITTLE, M.D., COLUMBUS, OHIO

A knife such as ophthalmologic surgeons use is often useful to the dermatologist. However, since the blade and handle are in one piece, the entire instrument must be discarded in case the blade is broken. It would produce a financial saving if a handle could be devised to be used with replaceable blades. Such an instrument can be improvised by insertion of a Hagedorn needle into a handle with a chuck. Handles of this nature may be obtained from laboratory and dental supply houses and are called dissecting needle holders or pin vises. The Hagedorn needle may need to be broken in half and the shank ground down to fit the chuck.

1617 Hawthorne Park.

The Brandenburg Instrument Company, of New York, say they will make a special handle with replaceable blades for dermatologic use.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

CARRION'S DISEASE: IMMUNOLOGIC STUDIES. CALDERON HOWE, Arch. Int. Med. **72**:147 (Aug.) 1943.

Howe conducted a survey of 203 inhabitants of two valleys near Lima, Peru, performing blood cultures and agglutination studies and correlating the results with the clinical data. All the patients had been residents of regions where bartonellosis is endemic, and all had mild or severe Carrion's disease in one of its manifestations. One attack of Oroya fever or of verruga usually conferred lasting immunity though the typical eruption may recur during the course of the illness. Howe thinks it unlikely that agglutinins play any major part in the acquired immunity which follows the clinical disease or in the apparent immunity of residents of endemic areas.

Howe's observations suggest that the titer of agglutinins rises and most often reaches a peak just prior to the appearance of the eruption during the early acute anemic stage of the disease (clinical or subclinical Oroya fever), when cultures of the blood regularly yield the parasite and it is often detectable in the blood smear. He concludes that the agglutination test may be of some aid in the diagnosis of unexplained fever, anemia and constitutional symptoms, representing mild or severe illness preceding a later recognizable eruption in a person who is likely to have been exposed to infection.

EPICELLULAR AND PERICELLULAR DEPOSITIONS OF AMYLOID AS THE STARTING POINT OF AMYLOIDOSIS. JOHAN T. PETERS, Arch. Path. **35**:832 (June) 1943.

There has long been vigorous discussion as to the point of origin of amyloid deposits in cellular tissue. Peters reports observations which led him to the conclusion that the deposition of amyloid on cells rather than deposition in the interstices of mesenchymal tissue may be the starting point of amyloidosis.

DIFFUSE GUMMATOUS MYOCARDITIS. H. R. PRATT-THOMAS, Arch. Path. **36**:80 (July) 1943.

Myocardial syphilis is rare and gross gummas have been recorded in only about 100 cases. Even less commonly does one observe a diffuse gummatous process unaccompanied by gross gummas. Pratt-Thomas reviews the histologic criteria essential for such a diagnosis and reports a case of diffuse syphilitic myocarditis in an infant with congenital syphilis.

OXYGEN CONSUMPTION OF SKIN AND HAIR GROWTH AFTER ADRENALECTOMY IN THE WHITE RAT. EARL O. BUTCHER, Endocrinology **32**:493 (June) 1943.

In rats an acceleration of growth of hair after bilateral adrenalectomy had previously been reported by Butcher, who in this article describes experiments which were conducted to determine if the growth following adrenalectomy is related to an increase in the oxygen consumption of the skin. He concludes that increased oxygen consumption of the skin results from adrenalectomy in the white rat and the increased oxidative processes appear to induce growth of hair in inactive follicles.

LYNCH, St. Paul.

CHROMOMYCOSIS. MORRIS MOORE, ZOLA K. COOPER and RICHARD S. WEISS, J. A. M. A. **122**:1237 (Aug. 28) 1943.

The authors report 2 cases of chromoblastomycosis. This disease is seldom recognized clinically except in areas in which it flourishes and presents characteristic verrucous lesions on the extremities. Usually the first indication of the corrupt diagnosis is received from the pathologist, who has found the sclerotic, dark brown, thick-walled cells of the fungus Phialophora verrucosa in the section of tissue.

The lesions may occur on almost all parts of the body. The reason for this is that the primary lesion in many instances has apparently been the result of a traumatic infection with contaminated material. Most of the patients have been farmers, workers of the soil or its products.

Clinically, chromoblastomycosis presents lesions which may be papular, verrucous, papillomatous, nodular, ulcerative, psoriasiform or granulomatous, with or without abscess formation and with rarely any suppuration except when due to secondary infection with bacteria. Scaliness is often a feature. Pain or pruritus rarely occurs. Systemic involvement is not a feature. As the disease progresses and persists, there is cicatrization such as is found in blastomycosis. On the extremities the progressive formation of additional lesions accompanied with tissue reaction may result in elephantiasis. The enlargement of the foot then resembles Madura foot.

Microscopically, the lesions of chromoblastomycosis reveal a cellular infiltration made up of polymorphonuclear leukocytes, lymphocytes, epithelioid cells, plasma cells, eosinophils and Russell's fuchsin bodies. Giant cells of the foreign body or Langhans type may be present. There is sometimes a tendency to pseudotubercle formation in the infiltrate. Necrosis and microabscesses such as are found in Gilchrist's disease are not prominent features. The sclerotic cells of the fungus are found scattered throughout the corium, especially in the abscesses or in giant cells. They occur either as single cells or in mulberry-like clusters.

Chromoblastomycosis is not a fatal disease. The prognosis is good despite the fact that therapy has not been encouraging. Iodides given by mouth or intravenously have not produced successful results in all cases. Usually this form of therapy has been supplemented with roentgen irradiation.

In 1 of the 2 cases reported by the authors, surgical excision and complete removal of the lesion brought about an apparent cure. In this case the infection was primary and on the helix of the right ear. Clinically it was diagnosed squamous cell epithelioma.

In the other case the infection occurred on the wrist, was verrucous and granulomatous and was difficult to differentiate clinically from tuberculosis verrucosa cutis, syphilis, granuloma annulare, porokeratosis and blastomycosis. On culture Phialophora verrucosa was isolated.

It is agreed by all observers of the disease that it is not truly a blastomycosis. The fungus in tissue or in culture medium does not bud but divides by formation of cross walls, or septums.

SULFATHIAZOLE ERUPTIONS: SENSITIVITY INDUCED BY LOCAL THERAPY AND ELICITED BY ORAL MEDICATION. BERTRAM SHAFFER, J. W. LENTZ and JAMES A. MCGUIRE, J. A. M. A. **123**:17 (Sept. 4) 1943.

The authors report 4 cases of acute dermatitis produced by the ingestion of sulfathiazole.

A feature of this group of cases is the fact that local application of sulfathiazole gives rise to generalized sensitization in the sense that subsequent oral administration of the drug may precipitate a sulfathiazole dermatitis. Again, this eruption tends to mimic the condition for which the patient was originally treated, and also it begins and is more pronounced at the sites at which sulfathiazole was applied locally.

Patch tests elicit negative reactions in the disseminate eruptions, but passive transfer tests performed with the Prausnitz-Kustner technic gave positive reactions for sulfathiazole and gave positive delayed tuberculin type reactions as well as the usual early wheal reactions.

DHOBIE MARK DERMATITIS. C. S. LIVINGOOD, A. M. ROGERS and THOMAS FITZ-HUGH JR., J. A. M. A. **123**:23 (Sept. 4) 1943.

When the personnel of the Twentieth General Hospital was first exposed to dhobie-laundered clothes, 14 per cent of the organization acquired a localized contact dermatitis. The causative agent was the marking fluid used by members of the dhobie caste throughout India. It is obtained from the nut of the ral, or bella gutti, tree. The dermatitis first appeared on that part of the skin in contact with the dhobie mark.

The dhobie mark is the probable cause of most cutaneous disease acquired from wearing dhobie-laundered clothes. It is unlikely that cutaneous fungous infections are transmitted by clothing washed by dhobies, and therefore use of the term "dhobie itch" as a synonym for tinea cruris and dermatophytosis should be discontinued.

DERMATITIS FROM SEMECARPUS ANACARDIUM (BHILAWANOL OF THE MARKING NUT) SPREAD BY MAIL. N. R. GOLDSMITH, J. A. M. A. **123**:27 (Sept. 4) 1943.

A bottle containing bhilawanol oil, shipped from India in a sealed mail pouch, partially opened and contaminated various pieces of mail. Sixteen of a force of carriers and clerks numbering approximately fifty who handled this mail acquired a vesicular eruption on the exposed parts within twenty-four hours. Patients treated with dressings wet with solution of boric acid or solution of aluminum acetate (Burow's solution) diluted 1:20 healed within ten days.

HENSCHEL, Denver.

MELANOTROPIC HORMONE AND VITILIGO. J. C. MUSSIO FOURNIER, J. M. CERVINO and O. CONTI, J. Clin. Endocrinol. **3**:353 (June) 1943.

Knowledge that the pituitary gland produces a melanotropic hormone responsible for the color of the skin of batrachians led Fournier, Cervino and Conti to study a possible effect of injections of the purified substance on vitiligo in 1938. To earlier reports are added the observations on 8 patients, of whom 5 were said to have obtained beneficial effects though there was not complete restoration to normal. Treatment was given by local intradermal injection of the substance, but changes were produced also in areas of vitiligo remote from the point of injection.

THE ENDOCRINE PUZZLE OF HETEROSEXUAL HYPERTRICHOSIS (HIRSUTISM). Editorial, J. Clin. Endocrinol. **3**:426 (July) 1943.

The author of this editorial points out the frequency with which one observes the distressing mustache and beard in girls and women. In many cases it can be regarded as an intensified familial racial characteristic but in other cases there are evidences of endocrine disorder. He concluded that in the absence of an adrenal tumor or an arrhenoblastoma, endocrine therapy so far offers no solution for the problem. Recommending bleaching and depilatory measures, he warns against electrolysis because of the risk of scarring and because he regards it as an "un-ending business."

STUDIES IN SENSITIZATION TO SKIN: I. THE PRODUCTION OF ANTIBODIES TO SKIN BY MEANS OF THE SYNERGISTIC ACTION OF HOMOLOGOUS SKIN ANTIGEN AND STAPHYLOCOCCUS TOXIN. RUDOLPH HECHT, MARION B. SULZBERGER and HARRY WEIL, J. Exper. Med. **78**:59 (July) 1943.

Hecht and his associates point out that there has been increasing attention to autosensitization, which is of interest to dermatologists because of the behavior of certain eczematous eruptions and because of Koebner's phenomenon.

Autolysates of rabbits' skin (skin antigens) were prepared for intramuscular injection and for precipitin tests. When homologous skin alone was injected into rabbits, the antibody formation was questionable or, at most, slight; but when staphylococcus toxin was also given the synergistic action resulted in demonstrable specific antiskin antibodies.

INCREASED RESISTANCE TO VIRAL INFECTION AS A RESULT OF INCREASED FLUID IN TISSUES. HAYWOOD M. TAYLOR and DOUGLAS H. SPRUNT, J. Exper. Med. **78**:91 (Aug.) 1943.

Previously Taylor and Sprunt had reported that rabbits receiving estrogen showed an increased resistance to dermal infection with vaccinia virus associated with a failure of particulate matter to spread in the skin. The present report describes experiments in which it is shown that the estrogen increases the amount of extracellular fluid in the skin. From their experiments the authors conclude that a correlation exists between spread of material in the skin, susceptibility to viral infection and increase in extracellular fluid.

LYNCH, St. Paul.

KAPOSI'S VARICELLIFORM ERUPTION. R. L. BARTON and L. A. BRUNSTING, Proc. Staff Meet., Mayo Clin. **18**:199 (June 30) 1943.

Barton and Brunsting report a case of Kaposi's varicelliform eruption. This is a rare exanthem similar in many respects to variola or vaccinia and characterized by a constitutional reaction of unusual severity. In almost all cases some form of antecedent disease of the skin has occurred. Often there is a background of infantile eczema or atopic dermatitis.

The disease begins suddenly with fever, malaise and an acute outbreak of numerous clear vesicles which are usually umbilicated. These may be scattered or in groups. Large numbers of new vesicles develop overnight in successive crops for three or four days or even a week. Those which appear first become pustular and rupture or become desiccated and fall off, leaving superficial pitted scars. The lesions resemble those of varicella, but they lack an individual halo of erythema. The bulk of the eruption is confined to the sites that

have been involved by the previous cutaneous disease. There is a high fever, which reaches its peak at the crest of the eruption. As a rule, the disease runs its course in from one to two weeks, the fever terminating by lysis.

The cause of Kaposi's varicelliform eruption is unknown. Hospital attendants and nurses caring for patients with the disease have been known to acquire staphylococcic infections of the hands or the face, but the exanthematous reaction did not occur.

Cultures from vesicopustules in cases of Kaposi's varicelliform eruption yield a variety of pyogenic organisms, mostly Staphylococcus aureus, but their etiologic significance is doubtful.

The Paul test was made by inoculation of a rabbit's cornea with the contents of a fresh vesicopustule. This test gives a distinct reaction to vaccinia and variola, but in the reported case the response was negative.

Successful vaccination is no protection against this eruption.

Co-Existence of Chronic Lymphogranuloma and Cancer. Leonardo Guzman, Radiology **41**:151 (Aug.) 1943.

In the Institute of Radium of Santiago, 7,318 patients with cancer and allied diseases were treated. In 9 of the patients associated lymphogranuloma venereum occurred. In 8 of them the lesions involved the genitals or rectum, and in 1, the floor of the mouth.

Henschel, Denver.

Protection in Radiology: An Exhibit. Edith H. Quimby and John Pool, Radiology **41**:272 (Sept.) 1943.

The authors have published photographs of original charts of an exhibit on protection in radiology. Unfortunately too few dermatologists are familiar with the most modern standards of protection against roentgen and gamma rays. The necessity for protection of the patient, the physician, the technician and the neighbors is briefly and accurately presented in pictures and words. The dangers of overirradiation are enumerated and graphically presented. Also useful are the data on the degree of protection offered by distance, various thicknesses of lead and their equivalents in iron, barium plaster, concrete and red brick. Tests to determine whether or not protection against radiation is sufficient are enumerated and described.

It is recommended that every dermatologist who uses roentgen rays and radium spend a few minutes to read this excellent presentation.

Cipollaro, New York 21.

The Time Required for the Eggs of the Body Louse (Pediculus Humanus Corporis De Geer) to Develop and Hatch at Different Temperatures. J. Davidson, M. J. Australia **1**:533 (June 12) 1943.

The body louse lays its eggs in the seams and folds of the undergarments of an infested person. The temperature and humidity at the surface of the body insure that the eggs are in an environment favorable for their development. Under these conditions, when the clothes are worn continuously, the eggs may develop and hatch in about nine days.

Changes in the humidity of the air do not influence the duration of the incubation period of the eggs. However, the mortality of the developing embryos increased when the eggs were kept in air of extremely high or low humidity.

The eggs will not develop completely and hatch at ordinary room temperatures, but they may remain viable for two or three weeks. They will undergo development and hatch when they are placed again in a favorable temperature. The temperature at which the eggs develop completely and hatch in the shortest time lies between 35 and 37 C. The eggs will not undergo complete development and hatch at 38 C. or higher or at 23 C. or lower.

The incubation period at 24 C. is eighteen days and decreases to six days at 37 C.

Sap Dermatitis and Conjunctivitis Caused by the Wild Fig (Ficus Tumila). P. B. English and L. P. Grey, M. J. Australia **1**:578 (June 26) 1943.

English and Grey report a number of cases of dermatitis venenata and conjunctivitis caused by the wild fig, Ficus tumila. The patients suffered from blistering of the skin, intense conjunctivitis and severe catarrhal irritation of the nasopharynx. The men had been engaged in clearing and burning off in a certain area which contained two wild fig trees. Patch tests with the sap of the fig produced typical erythema and vesiculation on the forearms.

Almost all the men who worked on this area were affected in some way. In 1 of them permanent impairment of the vision in one eye was due to the action of the irritant sap.

Reaction-Producing Antigens in Eczema of Infancy and Childhood. P. Ward Farmer Jr., M. J. Australia **2**:5 (July 3) 1943.

The results of scratch tests in 50 cases of eczema in children are reported. Horse dander, egg white and grass pollens are by far the commonest reaction-producing antigens.

House dust produced a reaction in 30 per cent, rye grass pollen in 52 per cent and an extract of mixed feathers in 20 per cent of the cases. Of the foodstuffs, egg white produced a reaction in 60 per cent, wheat in 17 per cent, cow's milk in 14 per cent and oatmeal in 9 per cent of the cases.

Horse dander produced a positive reaction in 50 per cent of the cases. The latter sensitivity appears to be a transmitted hereditary factor, as many of the babies aged under 12 months gave strong reactions.

Farmer recommends that the offending antigens be eliminated as far as possible in each particular case. Desensitization is advised when this is impracticable.

Henschel, Denver.

Society Transactions

PHILADELPHIA DERMATOLOGICAL SOCIETY

CARROLL S. WRIGHT, M.D., *Chairman*

CARMEN C. THOMAS, M.D., *Secretary*

Nov. 20, 1942

Lupus Erythematosus (Initiated by Sulfanilamide?). Presented by DR. EDWARD F. CORSON.

C. H., a white man aged 47, well nourished and with average musculature, presents erythematous macules and papules limited to the face and neck. In places there is a tendency to confluence and slight scaling. On the sides of the neck there is pigmentation suggesting poikiloderma of Civatte. For a superficial infection of the hand he was given sulfanilamide on Sept. 7, 1942, and after he had taken half a tablet an eruption broke out on the face. He continued taking the drug for several more doses, and the outbreak increased. It has never disappeared and has changed but little. There was little itching at first. There are no physical signs of visceral disease. The Wassermann reaction of the blood was negative. A complete blood count showed 81 per cent hemoglobin, 4,230,000 erythrocytes and 10,650 leukocytes, with 72 per cent polymorphonuclear leukocytes, 15 per cent lymphocytes, 4 per cent eosinophils and 9 per cent large monocytes; a test for porphyrin was not made. Three roentgen ray treatments of 60 r each at weekly intervals produced no effect. When a resemblance to lupus erythematosus was noted, two injections of a gold preparation (0.01 and 0.02 Gm.) were given, but they seemed to produce itching and this treatment was therefore stopped.

DISCUSSION

DR. FRED D. WEIDMAN: I should want to eliminate the possibility of this being one of the lymphoblastomas or sarcoid. These infiltrations are fairly deep; if it is lupus erythematosus I should say that it would have to be of the order of a lupus erythematosus profundus, such as Bechet has described. This case warrants a biopsy, particularly since the patient has lesions on the back of the neck.

DR. EDWARD F. CORSON: The eruption appeared with great suddenness and did not have the slightest appearance of lupus erythematosus at first. I saw it during the week of its appearance, and then it consisted of papules, entirely discrete, with no scaling and no itching, and I thought it possibly secondary syphilis. Serologic reactions of the blood for syphilis were repeatedly negative. The eruption then appeared elsewhere. Gradually the lesions flattened, acquired a scale and began to suggest lupus erythematosus by the confluence of some of the papules.

DR. CARROLL S. WRIGHT: I was of the opinion that this was lupus erythematosus and that it was of the type that seems to do well with bismuth therapy. For a long time I was skeptical about the value of bismuth for lupus erythematosus, but against this type of eruption it acts almost like a specific. I should like to have it tried for this patient and reported on at another meeting.

DR. EDWARD F. CORSON: Another suggestion made was that an eruption of this type might respond to nicotinic acid, and I had thought of trying that in the near future.

Angiokeratoma (Fordyce). Presented by DR. EDWARD F. CORSON.

H. H., a white man aged 36, presents numerous small flat (or pinhead-sized and elevated) purplish lesions on the lower portions of the scrotum. Larger keratotic growths have for the most part been treated by desiccation and are represented by crusts. One larger lesion is seen on the front of the scrotum. The patient spoke of them as "blood warts." Occasionally a small furuncle develops. These "warts" appear first as purplish-red punctiform angiomas, and supervening keratotic growths develop. No similar eruption exists in other members of his family, so far as is known. The lesions have been electrodesiccated, with good results.

DISCUSSION

DR. FRED D. WEIDMAN: I agree with the diagnosis. I believe that these lesions are not fundamentally keratotic, and it is misleading to employ the term "keratoma." They appear first simply as little vascular accumulations, and that is what they are, as seen in the sections shown this afternoon. It is only in the later stages that the keratosis appears. They are really keratotic "angiomas."

Angiomatous Leiomyoma. Presented by DR. JOHN B. LUDY.

M. S., a white man aged 66, thirty months ago observed small reddish papules on the outer side of the right arm in the region of the elbow. From one of these a biopsy specimen was taken. A month later a similar group appeared on the outer side and the dorsum of the left foot. Three months later a single lesion, which became the size of a hickory nut, appeared on the left cheek. This was reddish and gave the sensation of being cystic—it felt semisolid and was somewhat pearly or translucent. This patient was presented at the October 1940 meeting of the Philadelphia Dermatological Society as having epithelioma adenoides cysticum. Suggestions as to diagnosis at that time included sarcoid, Kaposi's sarcoma and nonpigmented melanoma.

On physical examination, the left diaphragm showed a fairly good curve and normal position; the right was 1 cm. higher. The heart was normal in size and position. The root shadows were not especially heavy. There was slight increase in the peribronchial shadows, more especially in the upper portion.

The tuberculin test elicited a 2 plus reaction. A roentgenogram of the chest revealed nothing significant. The Wassermann reaction of the blood was negative.

The biopsy slide was submitted for Dr. Montgomery's discussion at the dermatopathology symposium of the American Academy of Dermatology and Syphilology, but no definite opinion was expressed. Colonel Ash, of the Army Medical Museum, made a diagnosis of leiomyoma. Drs. Weidman, MacFarland and Ehrich diagnosed it as dermatomyoma. In November 1941, a lesion was excised from the right forearm. In Decem-

ber 1941 excision of the lesion of the face was carried out; two weeks later one was removed from the right hand, and six months later one was taken from the left foot. The others in these groups disappeared spontaneously.

DISCUSSION

DR. FRED D. WEIDMAN: I am embarrassed, but I stick to the diagnosis of leiomyoma.

DR. JOHN B. LUDY: Is not leiomyoma painful?

DR. FRED D. WEIDMAN: It should be.

DR. JOHN B. LUDY: This patient never had any pain.

DR. EDWARD F. CORSON: Some of the lesions were excised in May, and others disappeared spontaneously. Is that known in cases of leiomyoma?

A Case for Diagnosis (Parapsoriasis Guttata?). Presented by DR. ROBERT APPLESTEIN.

M. E., a white man aged 38, presents on the arms and thighs mostly, less on the back, chest and legs many pea-sized or smaller, reddish macules; the larger ones are somewhat elevated and slightly indurated; a few lesions have a definite, slightly yellowish scale. There are no lesions on the face; the hands are clear except for a few small recent lesions on the dorsum of the right hand. There is a small area of slight redness of the left buccal mucous membrane. About two weeks ago an eruption of small slightly itchy reddish macules developed on the trunk, upper extremities and thigh; there were a few on the legs and none on the face and hands. In the past week the chest has partially cleared, but additional macules have developed on the arms, back and legs, and a few small ones have appeared on the back of the right hand. The patient had a herniorrhaphy in 1922, a tonsillectomy in 1925, and "heart trouble" in 1936 said to be rheumatic. The patient's mother died of cancer of the stomach in 1923. There are no cutaneous diseases in the family. The Wassermann reaction of the blood on Oct. 16, 1942 was negative. The patient has been treated with sodium salicylate by mouth and a mild sulfur ointment locally for one week. The treatment has as yet produced no results.

DISCUSSION

DR. SIGMUND S. GREENBAUM: I should like to offer a diagnosis of Mucha-Habermann disease. There are macules, slight scaling and papules, although I saw no vesicles and it is too early for scars.

DR. C. C. THOMAS: The patient mentioned having a single initial lesion on the upper inner part of the thigh, present for two weeks before the onset of the generalized eruption. I suggest the diagnosis of pityriasis rosea.

DR. CARROLL S. WRIGHT: How can one rule out the possibility of its being psoriasis?

DR. J. M. SCHILDKRAUT, Trenton, N. J.: I saw this man recently, and my diagnosis was psoriasis guttata.

DR. SIGMUND S. GREENBAUM: It would be difficult for me to accept as guttate psoriasis an eruption which did not show at least some infiltration.

DR. FRANK C. KNOWLES: I think pityriasis rosea is a probable diagnosis.

A Case for Diagnosis (Granuloma Annulare?). Presented by DR. THOMAS BUTTERWORTH, Reading, Pa.

S. R. P., a white woman aged 57, presents a flesh-colored, arciform, infiltrated lesion on the radial side of the proximal phalanx of the left index finger. Some suggestion of a horny central ridge is present. There were three small warty papules on the dorsal surface of the proximal joint of the same finger. About six years ago the patient's cutaneous trouble began as "a lot of little warts" alongside the nail of the left index finger. As these gradually disappeared, new papules occurred farther down the finger. Not until recently has an arciform configuration been noted. Heberden nodes are present on most of the fingers.

DISCUSSION

DR. FRED D. WEIDMAN: The section was shown to the members this afternoon at the clinicopathologic conference, and there was no question about the lesion's being granuloma annulare. In addition, there are certain changes around the blood vessels which indicate an acute hematogenous process. There are leukocytes and damage to the walls of the blood vessels which made me think much of one of the rheumatic dermatoses, and I dare say that is why Dr. Butterworth included erythema elevatum diutinum in his protocol on the differential diagnosis. The section is valuable in supplying a missing link between a rheumatic condition and what some dermatologists regard as an etiologic entity, namely, granuloma annulare. In respect to the point whether tuberculosis is the only cause of granuloma annulare, I think these sections are highly valuable. The patient gives a history of having had two attacks of rheumatism in her shoulder which were painful and severe enough to confine her to bed.

Cutaneous and Systemic Blastomycosis. Presented by DR. FRED D. WEIDMAN and DR. LESLIE NICHOLAS.

W. S., a Negro man aged 35, presents on the face several crusted, discrete, circular, infiltrated lesions varying in diameter from 1 to 4 cm., showing central healing with atrophic scarring. In the anterior cervical region there are a few furunculoid lesions. On each hand, the right elbow and the right leg there are draining sinuses. In May 1942 the patient acquired many lesions on his face, buttocks and legs. Several days later the left knee became swollen and tender. At a hospital, roentgen examination showed hydrarthrosis and beginning necrosis of the patella. The cutaneous lesions were cultured, and there was no growth on bacteriologic mediums; inoculation into guinea pigs was reported as giving a negative result. The cutaneous lesions became more numerous and the leg more painful, whereupon the patient applied for treatment at another hospital (July 19). The following data are taken from the records of that institution:

Roentgen examination revealed probably healed primary tuberculosis and osteomyelitis of the left patella, with some involvement of the femur and bones of the leg. Subsequent examinations showed more destruction of the left femur and patella, and development of osteomyelitis of the right olecranon process, of the capitate bone, of the patella and of the left metacarpal bones.

The hemoglobin content varied from 38 to 60 per cent; the leukocyte count, from 12,800 to 28,000. The Wassermann (Kolmer) reaction of the blood was positive; the Kahn reaction, negative. Report on histologic examination (on a biopsy specimen taken from a lesion at the angle of the nose and upper lip) was blastomycosis.

Many attempts at culture were made, and finally Blastomyces dermatitidis grew only from pus from (1) the left knee, (2) the right olecranon and (3) the joint space of the left knee when it was opened in the laboratory after amputation.

Treatment consisted of amputation of the left leg, incision and drainage of numerous abscesses, repeated blood transfusions, low voltage roentgen irradiation of the face, administration of 200 drops (12.3 cc.) of saturated solution of potassium iodide three times a day,

1 Gm. of sulfadiazine every six hours, 2 tablets of brewers' yeast three times a day, 25 mg. of ascorbic acid daily and irrigation of the wounds with sulfanilamide solution and packing with iodoform gauze.

DISCUSSION

DR. VAUGHN C. GARNER: On several occasions Dr. Stokes has said that in the Midwest, where blastomycosis is common, it is not unusual to give 500 grains (02.5 Gm.) of iodide three times a day.

DR. FRED D. WEIDMAN: In cases of extreme infection like this, it is justifiable to administer iodides intravenously.

DR. JOHN F. WILSON (by invitation): Martin and Smith (*Am. Rev. Tuberc.* **39**:275, 1939) and Martin (*J. Invest. Derm.* **4**:471, 1941) have warned against the indiscriminate administration of iodides in the treatment of systemic blastomycosis. They have found that patients who are hypersensitive to B. dermatitidis often have fever and show extension of the lesions when given iodides. They should therefore be tested first with a vaccine of the organism, and if hypersensitive they should be desensitized. When this is done the iodides may be safely administered.

CARROLL S. WRIGHT, M.D., *Chairman*

CARMEN C. THOMAS, M.D., *Secretary*

Jan. 15, 1943

Exfoliative Dermatitis of Undetermined Origin. Presented by DR. REUBEN FRIEDMAN.

J. K., a white man aged 46, presents a generalized dermatitis. The skin is thickened, exfoliating and covered with innumerable excoriations. The onset of the eruption was in 1935 and involved the scalp, the back of the neck and the elbows. Except for temporary remissions, the eruption became progressively worse, spreading ultimately to involve practically the entire cutaneous surface. The patient has been treated by many physicians and hospitalized in various institutions. Some years ago he was under the care of a neuropsychiatrist, and he also received treatment by hypnotism while a patient in a New York hospital. Complete blood counts performed in June, July and September 1942 showed a variable picture: The hemoglobin content and red cell count were normal; leukocytes varied from 12,750 to 18,900, with polymorphonuclear leukocytes and lymphocytes normal and monocytes varying from 3 to 6 per cent and eosinophils from 5 to 15 per cent.

DISCUSSION

DR. HERMAN BEERMAN: This man was studied exhaustively at the hospital of the University of Pennsylvania for a possible physical cause for his eruption. None was discovered. He became a rather difficult patient in the hospital, and after a visit to Philadelphia Dr. Charles Rein, of New York, made arrangements for him to go to New York for psychotherapy with hypnosis. This was without effect on his skin.

DR. REUBEN FRIEDMAN: I undertook this patient's treatment "on a hunch." I recalled a former patient who had had a similar exfoliative dermatitis, intensely pruritic, and who was also a difficult patient. I had had him hospitalized on two occasions. When I met him on the street, I did not recognize him. He told me that some one had given him sulfapyridine and with that treatment he had recovered. Since the cause of Mr. K.'s condition is not known, I went on the assumption that it was due to a low grade focal infection and that sulfapyridine might as well be tried. I also tried intravenous injections of 1 Gm. of ascorbic acid and polyvitamin therapy by mouth. For the enormous edema of his legs and arms, I prescribed theobromine with sodium salicylate, hoping to produce elimination of fluids by that means. Soon afterward the skin softened and thinned a bit, and it became easy to get the needle into a vein, whereas prior to that great force had to be exerted. I should say that he has made 50 per cent progress. The course is now at a standstill, however, and I present him for further suggestions for treatment.

DR. LOUIS GOLDSTEIN: I believe eruptions such as these do not respond to any therapeutic measure except change of climate.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: Recently I saw a man who had an extensive dermatitis with edema of the arms and legs. A general practitioner gave him mersalyl and reduced the edema. It might be well to try this if one is unable to make an injection into a vein because of extensive edema.

DR. SIGMUND S. GREENBAUM: If this man has the neurogenic type of erythroderma, it might be worth while to hospitalize him and give him 15 or 30 grains (1 or 2 Gm.) of sodium amytal daily to put him into a sound sleep for ten or twelve days, so that he cannot touch his skin.

DR. HERMAN BEERMAN: The patient has received sodium amytal intravenously. Incidentally, shortly after his dismissal from the hospital, pneumonia developed and he received a sulfonamide compound from a general practitioner, without any apparent effect on his skin, although the pneumonia did respond.

DR. CARROLL S. WRIGHT: I think Dr. Goldstein's suggestion is best. I had a patient with the same sort of eruption, and I finally advised him to go to Arizona. He returned a year and a half later practically free of his trouble.

DR. THOMAS BUTTERWORTH, Reading, Pa.: It might be well to give this man a few sessions in a fever cabinet.

Parapsoriasis en Plaques. Presented by DR. J. M. SCHILDKRAUT, Trenton, N. J.

Mrs. E. B., a white woman aged 34, presents variously sized erythematosquamous patches having a saffron tinge extending from the knees to the neck and also involving the upper extremities. On the inner sides of the thighs the patches are pigmented. On the back the lesions have fused, forming a diffuse scaly erythroderma. There is a slight pruritus. The eruption had its onset seven years ago. The patient's appearance is good. She states that she has been told she has a fibroid uterus.

DISCUSSION

DR. FRITZ T. CALLOMON (by invitation): I thought the eruption seemed typical; the color of the small spots on the legs conforms completely to the first description of the disease. Brocq described it in 1897 as "erythrodermie pityriasique en plaques disséminées." The superficial atrophy is significant in this case. As to the therapy, I should like to learn the opinion of my American colleagues. May I ask whether this patient has been treated with roentgen rays?

DR. J. M. SCHILDKRAUT, Trenton, N. J.: The patient has had no treatment because she was seen for the first time yesterday. I had intended to try vitamin B complex.

DR. FRITZ T. CALLOMON (by invitation): There is no cure. In Paris I saw Professor Degrais treat a similar eruption—not so extensive—with radium com-

gresses. To resort to roentgen rays and radium is perhaps the best method, but I believe in this case the involvement is too extensive for radium treatment.

Balanosclerosis with Beginning Epithelioma. Presented by DR. J. M. SCHILDKRAUT, Trenton, N. J.

The surface of the glans penis of F. D., a white man aged 48, is sclerosed and white. Above the meatus there is a crusted, flat, centimeter-sized patch. Just below it are two small telangiectatic lesions. On the right side of the penis there is a small fissure at the junction of the adherent foreskin. The phimosis followed a circumcision approximately twenty years ago. The patient has had 900 units of roentgen therapy to the keratotic area.

DISCUSSION

DR. E. F. CORSON: Occasionally a conical piece has to be excised around the meatus to give free drainage.

DR. J. M. SCHILDKRAUT, Trenton, N. J.: A meatotomy was performed at the time he was circumcised.

DR. E. F. CORSON: There was an article by Drs. Freeman and Laymon, of Minneapolis, on balanitis xerotica obliterans (ARCH. DERMAT. & SYPH. **44**:547 [Oct.] 1941). The only treatment suggested was maintenance of an adequate meatus.

A Case for Diagnosis (Acute Lupus Erythematosus? Acute Thrombocytopenia?). Presented by DR. CARROLL S. WRIGHT.

D. T., a white girl aged 13, was in normal health until three weeks prior to her admission to the hospital, when erythematous lesions involving the face, hands and toes developed. These have persisted. During the past month she has had six episodes of severe epistaxis from the right nostril. Physical examination shows the patient to be acutely ill, toxic and dehydrated. There are scaling erythematous lesions on the cheeks in a butterfly distribution. Similar lesions appear in the auditory canals, on the fingers and on the toes. There are small ecchymoses on the tips of the fingers and toes. The uninvolved skin is pale. The right nostril is filled with a blood clot. The cervical, axillary and inguinal lymph nodes are discrete and slightly enlarged. The lungs were normal on physical examination. The heart is of normal size and has a regular rhythm. The rate is 156 a minute. Soft systolic mitral and pulmonic murmurs can be heard. Masses or organs are not palpable in the abdomen. A complete blood count made in January revealed 2,900,000 erythrocytes, 48 per cent hemoglobin, 10,600 leukocytes and 18,360 platelets. Following four transfusions the count was 70 per cent hemoglobin (11.5 Gm.), 4,360,000 erythrocytes, 5,300 leukocytes and 60,480 platelets. The coagulation time was three minutes and the bleeding time three and one-half minutes. The vitamin C level of the blood was 1.12 mg. per hundred cubic centimeters. The prothrombin time was seventeen and five-tenths seconds (control sixteen and five-tenths seconds). Anaerobic culture of blood in January yielded no growth. A roentgenogram of the chest in January showed a diffusely distributed process surrounding the pulmonary roots and extending into the lower lobes in the ventral part of both lungs. The inner third of the diaphragm was obscured on both sides in an indistinct outline between the pleura and the pericardium on both sides. The right maxillary sinus was opaque on fluoroscopic examination.

DISCUSSION

DR. SIGMUND S. GREENBAUM: This case is probably the most interesting presented this evening. Although the girl has a butterfly-like eruption over the nasal bridge and adjacent cheek areas resembling lupus erythematosus, close examination reveals that the lesions are entirely purpuric and not an erythema, such as should be present if it were acute lupus erythematosus; furthermore, purpuric lesions are present in the left auricle, on the right buccal mucosa and on the tips of the fingers and toes. There is bleeding from the nose and from renal structures as well. With a platelet count of 18,000 and these signs I favor the diagnosis of acute thrombopenic purpura.

DR. THOMAS BUTTERWORTH, Reading, Pa.: I think that this is a case of Libman-Sacks disease. The lesions on the face, hands and toes are definitely purpuric. There is a faint thrill and a distinct murmur at the apex of the heart. The patient has a septic type of temperature and a few red cells in the urine. All of this fits in with the Libman-Sacks syndrome. She may have a remission, but recurrences will probably take place. The outlook is rather poor. About a year ago I had a patient who obtained clearing with quinine therapy.

Neurofibroma (Plexiform Neuroma). Presented by DR. REUBEN FRIEDMAN.

B. P., a white woman aged 29, presents a large patch consisting of several score elevated, shiny, translucent, reddish and pale bluish red, firm, hard, nonherniating papules and nodules varying in diameter from several millimeters to 1 or 2 cm. These are present on the left side on, above and below the scapular region. They have a tendency to follow the lines of cleavage and the obliquity of the ribs. A group of three small lesions is present on the left side of the chest near the axilla; one small lesion appears on the middle of the right arm. Several new lesions are present on the right side of the back. The lesions are asymptomatic and have no tendency to undergo spontaneous involution or atrophy. The eruption began about eleven or twelve years ago on the back of the left shoulder with the appearance of small nodules. Similar new lesions have appeared from time to time up to the present. Serologic tests of the blood for syphilis elicited negative reactions. A biopsy performed on June 29, 1942 was reported as follows: "The covering layer of stratified squamous epithelium was thin, and there was moderate distortion of the pegs, suggesting pressure from the corium, where there was a mass of proliferative nerve tissue. The cells were elongated; the nuclei were pyknotic, and the arrangement showed palisading. This was a fairly typical neurofibroma."

DISCUSSION

DR. THOMAS BUTTERWORTH, Reading, Pa.: After the pathologist comes to the rescue, I think this can be explained as a plexiform neurofibroma, one of the forms of von Recklinghausen's disease. The ones I have seen—only 2—have occurred on the thighs, with grouping of nodules as in this patient. I am sure this case will be classified among the cases under that heading.

Rodent Ulcer of the Breast Following Radiodermatitis. Presented by DR. REUBEN FRIEDMAN.

C. E., a white woman aged 46, presents on the upper half of the left breast a large ulcer, approximately 12 cm. in diameter and about 6 cm. in its greatest depth. It has a slightly raised, rolled border which bleeds easily on trauma. The floor of the ulcer has an irregular surface covered with necrotic, sloughing tissue and a moist, foul-smelling, seropurulent discharge. The rest of the breast is of boardlike hardness and rigidity. The overlying skin is brownish red, atrophic and telangiectatic. The patient first noticed a lump the size of

a large walnut in the upper right quadrant of her left breast late in 1937. She received ten roentgen ray treatments in 1938, approximately ten in 1939 and seven or eight treatments in 1940. In January 1941 the ulcer developed, and it has become progressively larger and deeper. A roentgenogram of the chest made several months ago revealed no evidence of metastasis.

DISCUSSION

DR. J. M. SCHILDKRAUT, Trenton, N. J.: I think this patient should have a radical excision of the lesion.

DR. CARROLL S. WRIGHT: It would be necessary to remove half her breast, would it not?

DR. J. M. SCHILDKRAUT, Trenton, N. J.: Skin could be grafted, with good results.

DR. REUBEN FRIEDMAN: Shortly after the breast began to ulcerate, in January 1941, a surgeon was consulted and advised removal. As for prognosis, he did not give even a guarded one. Another physician gave the family a prognosis of half a year of life for the patient. Under the circumstances, she decided to decline the operation and live with cancer rather than die without it. She dragged through 1941 and 1942, and it is now 1943; she weighs 140 pounds (63.5 Kg.), 5 pounds (2.3 Kg.) more than she did five years ago. She works eight or ten hours a day and feels hale and hearty except for an occasional pain or ache in the breast.

DR. SIGMUND S. GREENBAUM: If she does not want to submit to operation it might be worth while to try a colloidal gold preparation by mouth, as suggested by Toomey.

DR. J. P. GUEQUIERRE: I advise a wide excision with the cutting cautery and then electrocoagulation.

DR. THOMAS BUTTERWORTH, Reading, Pa.: I have seen lesions like this and thought them ulcerated adenocarcinoma. I raise the question whether it is glandular or epidermal.

DR. SIGMUND S. GREENBAUM: I saw a patient with a similar extensive malignant growth of the breast going down and down physically. A physician promised to cure her, whereupon she gained 30 pounds (13.6 Kg.); finally she died. The thought of having a cancer often helps to bring about a fatal result.

Tuberculosis of the Skin (Sarcoidosis?). Presented by DR. CARROLL S. WRIGHT and DR. REUBEN FRIEDMAN.

H. G., a Negro woman aged 43, gives a history of anterior uveitis of tuberculous origin for the past six years. Cutaneous lesions developed several years ago. The histologic diagnosis was noncaseating tuberculosis. A clinical diagnosis of Boeck's sarcoid was made. The Mantoux test, however, elicited a strongly positive reaction. A roentgenogram of the chest showed symmetric bilateral apical fibroid tuberculosis, but the patient presents no pulmonary symptoms. The clinical diagnosis was benign hematogenous tuberculosis. A roentgenogram of the hands showed definite abnormalities of the phalanges and spotty demineralization in all the bones but no definitely punched-out areas such as are characteristic of Boeck's sarcoid. There was thinning of the cortex of these bones. The Wassermann reaction of the blood was negative. The patient is being treated with gold sodium thiosulfate, with no change in the lesions.

DR. SIGMUND S. GREENBAUM: I am glad to see this case classified as an instance of tuberculosis of the skin and not of sarcoidosis or even of Boeck's sarcoid. The disease is definitely tuberculosis of the skin.

DR. EDWARD F. CORSON: It is the characteristic type one sees in the Negro.

DR. HERMAN BEERMAN: Why is it called tuberculosis?

DR. SIGMUND S. GREENBAUM: On clinical grounds it does not look like sarcoid, and on histologic grounds it is noncaseating tuberculosis; sarcoid has no histologic structure like that.

DR. REUBEN FRIEDMAN: She was given old tuberculin, but the eruption flared so severely and the changes in the pulmonary roentgenogram were so pronounced that the tuberculin therapy was discontinued.

DR. MORRIS MARKOWITZ: It is not typical of sarcoid to be noncaseating?

Necrobiosis Lipoidica Diabeticorum. Presented by DR. I. ZUGERMAN.

K. B., a white youth aged 18, had large blisters on both feet in May 1939. The exact diagnosis was not recorded in his history, but local treatment cleared the eruption. One week later edema and an erythematous eruption developed on the right side of the face. Laboratory study showed the urine to contain sugar and the blood sugar level to be 300 mg. per hundred cubic centimeters. With management for diabetes the blood sugar level came down to 137 mg. approximately two weeks ago.

In April 1942, the patient discovered several round "sores" on the leg. These remained untreated until the end of December, when an ulcer developed in one area and the patient reported to the dermatologic clinic.

On the ankle and upper part of the right leg there are circular, sharply bordered, bright red papules, from 3 to 3.5 cm. in diameter. They are covered by a slight scale and fade under diascopic pressure. The central portions of the lesions are somewhat sunken and atrophic and yellow. Telangiectases are present. The surrounding skin is entirely normal. Central ulceration is found in the topmost lesion. This has been refractory to treatment.

The latest urinalysis revealed normal values. The Wassermann reaction of the blood was negative. The blood sugar level was 137 mg. A blood count was normal. Treatment has consisted of a low cholesterol diet and application of 5 per cent sulfathiazole cream locally.

DISCUSSION

DR. CARROLL S. WRIGHT: What was the cause of the ulceration?

DR. I. ZUGERMAN: The ulceration was spontaneous. Somebody suggested a diagnosis of dermatitis factitia, but I cannot see any reason for accepting that diagnosis.

DR. SIGMUND S. GREENBAUM: It is strange that this condition does not appear more often in diabetic clinics and wards. I have personally examined hundreds of diabetic patients in the metabolic wards of the Philadelphia General Hospital and have been surprised to find not a single instance of so-called necrobiosis lipoidica diabeticorum.

BROOKLYN DERMATOLOGICAL SOCIETY

MORRIS M. ESTRIN, M.D., *President*

SEYMOUR H. SILVERS, M.D., *Secretary*

March 15, 1943

A Case for Diagnosis (Tertiary Syphilis of the Skin? Multiple Epithelioma of the Skin?). Presented by DR. MOSES M. SILVERMAN.

L. P., a white American carpenter aged 62, first noticed swelling and itching of his right leg in March

1942. Soon large patches of red papules and crusts appeared, spreading from the ankle to the hip. Most of these lesions resolved spontaneously, but one raised plaque about the size of a silver dollar persisted on the right shin. This lesion was completely excised at Kings County Hospital and submitted for histologic examination. Soon thereafter a soft raised papule 1.5 cm. in diameter, with a purulent discharge, appeared at the angle between the nose and the inner left canthus of the eye. Three weeks after its initial appearance it was excised for histologic examination. Since that time three or four such lesions have appeared rapidly, all on the left side of the nose.

The patient recalls that in 1925, 1927 and 1928, similar lesions appeared on the same area of the nose and were excised. Thereafter radium treatment was given to the area at another institution.

The skin of the entire face and neck is freckled and pigmented and has many telangiectasias, typical of the "outdoor" complexion. Along the left aspect of the nose there are four or five elevated papules with depressions and scarred areas. Each papule is soft and crusted in the center and seems to exude a purulent fluid when the crust is removed. None is larger than 1 cm. in diameter. Although these lesions are pink-red they are not painful or acutely inflamed. Over the right tibia there is a large bluish white, thin, pliable scar.

The Wassermann reaction of the blood was negative.

Biopsy was made of a specimen from the anterior tibial region, in which the continuity of the epidermal lining was disrupted at one point by a transition to a neoplasm of low grade malignancy. The tumor was infiltrating rather extensively the underlying cutis immediately beneath and also laterally (beneath the normal epidermis) in the form of large masses, irregular islands and nests of flat squamous cells. The neoplasm exhibited a decided degree of differentiation, as evidenced by well formed epithelial pearls, keratin formation and intercellular bridges. The stroma contained a dense and diffuse infiltrate of small round and plasma cells. The diagnosis was acanthoma.

A specimen from a lesion on the nose consisted of one piece of tissue which was evidently skin. This tissue was pearly gray and presented an irregularly circular, finely granular gray-brown ulceration at its periphery. It showed a low grade tumor of epidermoid type. The tumor was infiltrating the subcutis in the form of sheets and irregular masses of polyhedral cells. It exhibited a remarkable degree of differentiation, as evidenced by the presence of mature flat squamous cells, intercellular fibrils, epithelial pearls and an extensive degree of keratinization. Occasional mitoses were noted along the marginal row of the tumor masses. The fibrous stroma was irregularly sprinkled with small round cells. The diagnosis was acanthoma.

DISCUSSION

DR. HERBERT LEAVITT (by invitation): The histologic picture of the lesions on the nose was similar to that of the lesions on the leg. I believe that all these lesions represent a type of epitheliomatosis of the skin. The patient has been an out-of-doors worker all his life, and that type of skin is prone to low grade epithelioma.

DR. LESSER M. FRUCHTBAUM: The left side of the nose shows a definite radiodermatitis. The right side shows an epithelioma. It may be that roentgen irradiation has hastened the process and formation and development of the epithelioma.

DR. ABRAHAM WALZER: The patient has a "farmer's" skin, which is susceptible to involvement by epithelioma.

DR. DAVID M. DAVIDSON: I agree that on clinical grounds the lesion suggests basal cell epithelioma. The histologic structure is that of a prickle cell epithelioma.

DR. C. THOMAS CHIARAMONTE: I understand that the history of the lesions is only of four to eight weeks' duration, and this is too short a time for epithelioma.

DR. DAVID M. DAVIDSON: There is a history of the patient's having had similar lesions which were excised many years ago.

DR. ABRAHAM WALZER: Four to eight weeks is a short time, but there are cases in the literature in which epitheliomas have developed in that period. That would not militate against the diagnosis.

DR. SEYMOUR H. SILVERS: I saw this man in conference last Friday, and the history as I obtained it at that time was slightly different. I did not know then that he had received radium to the nasal lesions four or five years ago. The history was that there had been a lesion on the leg which had been excised and had healed. Then, within a few weeks a large lesion involving the left side of the nose appeared. My diagnosis was that it was a gumma, despite the negative Wassermann reaction of the blood. If all the facts are taken into consideration, tertiary syphilis still has to be thought of. The lesion spread rapidly. The lesion on the end of the nose looks worse now than it did a few days ago. I cannot imagine that a basal cell or prickle cell epithelioma would develop so rapidly. I think the histologic section is also compatible with a tertiary lesion.

DR. LESSER M. FRUCHTBAUM: The epithelioma of the skin developed on the area which had a radiodermatitis. Once this condition develops, it spreads rapidly.

DR. C. THOMAS CHIARAMONTE: I agree in full with Dr. Silvers' remarks. I believe that a therapeutic test should be tried. It is possible for epitheliomas to develop rapidly, but in most instances they are preceded by keratosis.

A Case for Diagnosis (Morphea?). Presented by DR. SEYMOUR H. SILVERS.

N. S., a white school boy aged 11 years, first noticed the appearance of a peculiar patch of circumscribed discoloration of the skin and thickening on the inner aspect of the right arm. This occurred three and a half years ago and six months after the onset of an attack of polyarthritis. Soon afterward multiple patches appeared on the upper and lower extremities and the buttocks. These manifestations were without pain, itching, burning or any other discomfort. The arthritis continued with frequent attacks accompanied with residual pain and stiffness of the extremities. The patient was advised not to worry about the eruption and was told that it was a manifestation of the arthritis. He has been receiving injections of a preparation of gold at a clinic for arthritis, but there was no attempt to treat cutaneous lesions. The patient had an intestinal infection, possibly colitis, at the age of 3 years.

The skin of the upper and lower extremities shows many large irregular faintly pink patches. These vary from the size of a quarter to an area covering the entire buttock. They have palpably raised borders, are faintly violaceous, have a round, oval or serpentine outline and have pale or white slightly depressed centers. Many of the patches on the lower extremities, where they are most numerous, exhibit confluence and present an irregular, variegated appearance. The trunk is completely free of lesions.

The urine showed no albumin, sugar or acetone and no abnormal microscopic elements. The Wassermann reaction of the blood was negative. The urea content

of the blood was 39 mg. and the sugar content 82 mg. per hundred cubic centimeters. A twenty-four hour specimen of urine examined for arsenic showed 0.01 mg. (the normal value for our laboratory is 0.003 mg.). The total cholesterol content of the blood was 200 mg. per hundred cubic centimeters; the content of cholesterol esters was 121 mg. and of free cholesterol 79 mg. The erythrocyte sedimentation rate was 6 mm. in one hour.

Section of two pieces of skin taken from the edge of one of the lesions of the left arm showed the following microscopic changes: The superficial epidermis showed atrophic changes, the rete pegs being flattened and poorly defined; there was some keratosis; the pars papillaris showed some fibrosis, and the deeper portion of the subcutis contained focal accumulations of lymphocytes. The diagnosis was "atrophic dermatitis: morphea(?)."

DISCUSSION

DR. ARTHUR R. PERSKY: I do not believe the diagnosis is morphea. The type and distribution of the eruption are more compatible with the diagnosis of fixed eruption due to gold salts. I did not see the sections.

DR. JOEL SCHWEIG: I believe that this is a classic case of morphea, and I agree with the diagnosis of Dr. Silvers. There are present all the features of the disease in question, including the raised, progressive border with the lilac ring. An investigation should be made for any residual thymus, which is frequently found. The changes in the joints are correlated to the eruption, and it is not an arthritis per se. I do not think that a diagnosis of fixed drug eruption can be considered.

DR. DAVID M. DAVIDSON: I agree with the diagnosis. I should say that it is not common to see all the lesions in the same atrophic stage, with the borders still as active as they are in this case.

DR. ABRAHAM WALZER: I cannot see any trace of morphea in this case. Morphea is circumscribed scleroderma, and the only thing suggestive of it is some elevation of some of the borders, a faint erythema and only a suggestion of atrophy. There is a type of granuloma annulare which this may suggest.

DR. MORRIS M. ESTRIN: Most of us agree that clinically this looks like scleroderma. The section offers further evidence to substantiate the diagnosis.

DR. SEYMOUR H. SILVERS: I think that the diagnosis of morphea can be made regardless of the biopsy, because it is a typical textbook picture. This boy was confined to hospitals for four months with a disabling disease diagnosed as arthritis. Besides the dermatologic lesion he also had an atrophy of the interosseous muscles which control the movement of the fingers. He also presents evidence of endocrine disturbance. He shows striae on both buttocks.

DR. ABRAHAM WALZER: The diagnosis of scleroderma does not depend on the border. Some lesions of morphea have no border. The primary factor is scleroderma. The border of the lesion if characteristic will help the diagnosis, but its absence does not eliminate such diagnosis. Clinically, this is not scleroderma. All that is shown are annular lesions with slightly depressed borders. There is not a single lesion on the entire body which shows scleroderma.

Sarcoidosis. Presented by DR. MOSES SILVERMAN.

Mrs. R. H., a Negress aged 24 years, complained of blisters and nodules on both upper and lower extremities, blurring of vision and pain in the eyes for the past year and a half. Two years ago she contracted syphilis and showed a generalized eruption. As the rash subsided, iritis and then secondary glaucoma developed. She has been receiving antisyphilitic therapy for nearly two years, but the Wassermann reaction of the blood remains positive. Eighteen months ago she noticed many deep, hard nodules on the skin of her arms and legs. There were also many superficial blisters. These came in crops and seemed to subside from time to time. They were never painful and did not itch. At the same time her vision became blurred.

Examination of the skin of the upper and lower extremities shows many firm, tender nodules which appear to extend into the subcutaneous tissue. The skin over some of these nodules is dusky and pigmented, while that on others is erythematous and shows definite vesicles. There are some superficial vesicular lesions without nodules. The nodules vary from 0.5 to 1.5 cm. in diameter. The eyes show corneal opacities, resulting in loss of all vision but perception of light and rendering examination of the eyegrounds impossible.

Urinalysis showed no albumin, sugar or microscopic abnormalities. The hemoglobin content, red and white blood cell counts and differential count were within normal limits. The tuberculin test (Mantoux) with a dilution of 1:10 elicited a negative reaction.

A roentgenogram of the chest showed moderate enlargement of both hilar regions as a result of enlarged nodes. There were irregular nodule-like infiltrates distributed bilaterally and somewhat symmetrically. A roentgenogram of the long bones, the hands and the feet showed no osseous changes.

A section of the skin and a subcutaneous nodule from the right arm showed atrophy, extensive parakeratosis and hyperkeratosis of the superficial epidermis. The subcutis was almost entirely replaced by a nodular, granulomatous lesion. These nodules showed prominent endothelial cell proliferation. Within the central portion of some of these nodules, as well as diffusely scattered throughout the periphery, there were foci of degeneration which resembled fibrinoid necrosis. Occasional agglutination of cells forming pseudo giant cells was noted. They did not resemble the Langhans type of giant cell. There was no true caseation. The inflammatory infiltrate was made up of lymphocytes. Epithelioid cells were also prominent. A review of two previous sections taken eight months ago showed histologic processes identical with those described.

DISCUSSION

DR. SEYMOUR H. SILVERS: I agree with the diagnosis. This is an interesting case because of the question as to whether the tubercle bacillus is the cause of the lesions.

DR. DAVID M. DAVIDSON: Many cases have been reported in the literature with a history of sarcoidosis undergoing change and eventually ending as tuberculosis.

DR. JOEL SCHWEIG: The clinical aspects of this case are unusual, being rarely encountered in sarcoidosis of the skin. The most common types are known to be the flat, the infiltrative, the small nodular and the large nodular lesions. This patient, however, presents the miliary type of sarcoid, named miliary lupoid because of its resemblance to tuberculosis miliaris disseminata. Differentiation between the two can usually be made histologically.

DR. ABRAHAM WALZER: Some of the lesions are not suggestive of sarcoid. The internal changes, i. e., in the lungs, are suggestive of sarcoid. This is an important factor. I think the disease is sarcoid, but I cannot explain some of the cutaneous lesions. Some of them have depressed centers, almost like those seen in syphilis or even in chickenpox or smallpox.

DR. JOEL SCHWEIG: The term benign lymphogranulomatosis, as sarcoidosis has been named by Schauman, suggests a relationship to malignant lymphogranulomatosis (Hodgkin's disease), but in the clinical sense only. While the former has a long-drawn-out course with insignificant interference with the patient's well-being, the latter runs a short, violent course with a fatal outcome.

A Case for Diagnosis (Herpes Gestationis?). Presented by DR. LOUIS J. FRANK.

Mrs. N. M., a white American housewife, aged 22, noticed itching and blisters on both feet three weeks ago. Within the next few days many red areas appeared on the legs and ankles and about the areola of the breasts and then spread over the body. These red lesions itched intensely, and many of them subsequently became bullous. The patient stated that she had had a similar eruption in 1940 when she was six months' pregnant. The cutaneous lesions at that time became so severe that termination of pregnancy was advised. This was done at the eighth month, with rapid resolution of the lesions subsequently. Her last menstrual period began Nov. 15, 1942.

Examination of the skin reveals multiple vesicles and bullae scattered and grouped over the entire body. They are most numerous on the palms and soles, the flexor surface of the forearms, the areola of the breasts and the umbilicus. The lesions are thin-walled and flaccid, and many of them exude a pale yellowish serum. Many of these vesicles lie in the center of round pale erythematous macules, most of which exhibit concentric rings suggesting the typical "iris" formation. Wheals resembling urticaria can be seen. The uterus is enlarged to the size compatible with four months' gestation.

The urinalysis showed a 1 plus reaction for albumin, no sugar or acetone and no abnormal microscopic elements. The Wassermann reaction of the blood was negative. The urea content was 25 mg. and the sugar content 78 mg. per hundred cubic centimeters.

DISCUSSION

DR. HERBERT LEAVITT (by invitation): There have been 3 patients with this disease at the Brooklyn Hospital within the past four or five months. Some physicians believe that herpes gestationis is a form of dermatitis herpetiformis; others, that it belongs to the erythema multiforme group.

DR. JOEL SCHWEIG: It is evident that this is a toxemia of pregnancy manifesting itself by symptoms characteristic of erythema multiforme. At present the patient is in her third month of gestation, after having had two previous pregnancies in the first of which she had a similar eruption. The diagnosis will be finally established by the fact that if the disease is herpes gestationis a spontaneous recovery will occur after delivery of the child. However, the prognosis must be considered as uncertain while pregnancy lasts. I wish to cite the case of a woman who is under my observation now. She has had an eruption resembling erythema multiforme bullosum which developed in her fourth month of gestation. Owing to a severe febrile state and general debility, the pregnancy was terminated. The eruption, however, became worse. Today she has pemphigus of the foliaceous type. I suggest that the diagnosis of such eruptions be withheld until the termination of pregnancy.

DR. DAVID M. DAVIDSON: Clinically, this patient presents the typical picture of erythema multiforme bullosum. In the cases of other pregnant women one sees the clinical picture of dermatitis herpetiformis. Both are a clinical expression of a toxic dermatitis due to pregnancy.

DR. LESSER M. FRUCHTBAUM: There is no question that a pregnant woman may have any kind of dermatologic lesion. In this case there is no question about the etiologic factor. The woman has had one pregnancy with a similar eruption. She had a miscarriage which may have been due to some form of toxemia. The treatment proposed for such conditions is the emptying of the uterus. Whether this entity is called dermatitis gestationis or dermatitis herpetiformis due to gestation is not important.

DR. HERBERT LEAVITT (by invitation): In the 3 patients who came under my observation I could see no other signs of toxemia of pregnancy. In the woman seen tonight the symptoms appeared early in pregnancy. In the other 2 they occurred much later. In 1 they developed just before term, and the other woman is in the sixth month of pregnancy.

DR. ABRAHAM WALZER: Herpes gestationis is probably a toxic manifestation of some sort. This case should not be considered one of herpes gestationis but as one of dermatitis herpetiformis.

A Case for Diagnosis (Amyloidosis Cutis? Poikiloderma? Lupus Erythematosus?). Presented by DR. LOUIS J. FRANK.

Mrs. M. S., a Jewish woman aged 73, complained of a rash of the upper extremities, chest, neck, scalp and face of five years' duration. The past history is irrelevant. The rash started on the scalp. She consulted several physicians, who gave her local medication. The eruption gradually spread to involve the areas aforementioned. The itching gradually subsided.

The patient now shows an ill defined reticulated eruption on the extensor surfaces of the forearms, upper part of the chest, back of the neck, sides of the face, forehead, bridge of the nose, alae nasi and scalp. The rash roughly involves the areas exposed to the sun. On the chest are numerous fine telangiectases and atrophic areas. The eruption in this area resembles a roentgen dermatitis. The lesions on the extremities and neck resemble a neurodermatitis.

Histologic examination of a section taken from the skin of the chest was reported as follows: The epidermis was thinned; the rete pegs were flattened and there was a decided intracellular and extracellular edema. At one point there was a hyaline mass. There was a diffuse infiltration of cells, consisting mostly of plasma cells. Elements of sweat glands and sebaceous glands were seen in normal numbers.

DISCUSSION

DR. SEYMOUR H. SILVERS: One of the diagnoses suggested is amyloidosis cutis. When I first saw the patient her scalp was covered with hair, but under the hair could be seen thick crusts with white and gray scales. Alongside her ears and neck and on part of her face were red lesions, which were telangiectatic and ill defined, with a slight suggestion of atrophy of the skin. On the chest and elbow the lesions were lichenified. Since lichenified eczema may resemble amyloidosis of the skin and may be associated with poikilodermatous changes, I suggested the diagnosis of amyloidosis cutis. The congo red test did not reveal the presence of amyloid. The histologic picture showed nothing significant. I doubt whether any of the diagnoses as presented are correct.

DR. DAVID M. DAVIDSON: I agree with Dr. Silvers that the three diagnoses are incorrect. The lesions on the scalp, face, forehead, cheek bones and outer parts of the face are all limited to the location where a person is apt to be exposed to the weather. The location itself would suggest to my mind some external cause, such as sun or some other element.

DR. LESSER M. FRUCHTBAUM: The poikiloderma-like changes of atrophy, telangiectasia and pigmentation in this case are a result of a process connected with avitaminosis in conjunction with the effect of rays of the sun on the exposed parts of the body. From my experience I found that nicotinic acid gives good results, and I suggest that the patient be given nicotinic acid, as for pellagra.

DR. C. THOMAS CHIARAMONTE: I believe that the changes in the skin are permanent and that keratosis will eventually develop. The patient states that she was exposed to the sun, and the line conforms to that of a bathing suit.

DR. ABRAHAM WALZER: One does not cure poikiloderma. It is an atrophy of the skin, with permanent destruction which cannot be replaced. My first impression was that the patient has lupus erythematosus, and all evidence points toward that. Acute lupus erythematosus may follow exposure to the sun. She shows atrophy with erythema in every one of the areas on the scalp. The lesions on the arms are not poikiloderma.

DR. C. THOMAS CHIARAMONTE: In the first place, the patient's age is against the diagnosis of lupus erythematosus. This disease is rarely found developing in the late sixties. In the second place, as Dr. Silvers mentioned, the presence of so much involvement with so little alopecia is incongruous. Certainly, in the scalp, of all places, one would expect to see follicular changes.

DR. JOEL SCHWEIG: I do not know what the disease is, but I believe that an attempt should be made to find out whether there exists a systemic disorder which may be the cause of the present manifestations in the skin.

A Case for Diagnosis (Generalized Progressive Scleroderma?). Presented by DR. LOUIS J. FRANK.

Miss Y. E., aged 32, a Jewish waitress, noticed burning, throbbing and hardness of the skin of her hands in January 1942. This occurred after exposure to silver polish and the handling of ice for six weeks. The skin blistered and began to peel a few days after the first attack and became progressively harder and less flexible. The patient was forced to give up her employment as a waitress three months later because of this eruption, as well as because of subsequent stiffness of the feet and ankles and the occurrence of many colds and articular pains. Since that time the skin of her entire body has became progressively stiffer, harder and thicker, limiting her movements in many ways. The patient worked for fifteen years prior to the onset of her illness handling fruits and vegetables and was exposed to cold and dampness for long hours.

The skin of the entire body has a diffuse, hard, nonpitting turgor and a yellowish waxy color. There is loss of many of the normal cutaneous folds and tension lines, these changes being noted chiefly on the skin of the hands and feet. The skin of the fingers seems stretched so tight that the joints are blanched white and the intervening skin has a dusky red color. Complete flexion of the fingers is impossible. There is no loss of normal hair or nail structures, but lanugo is sparse.

The hemoglobin content, red and white blood cell counts and differential counts were within normal limits. The urinalysis showed no abnormal changes. There was moderate periapical infection with resorption of bone about the right molars, as shown by roentgen examination. The Wassermann reaction of the blood was negative. Roentgenograms of the long bones showed no osseous changes.

DISCUSSION

DR. HERBERT LEAVITT (by invitation): The only form of medicament we have tried thus far for any considerable length of time has been sodium thiosulfate, on the ground that this disease might be caused by arsenic. In the beginning we tried extracts of pancreatic tissue, but despite the therapeutic trial the patient has become progressively and rapidly worse over the period of observation.

DR. DAVID M. DAVIDSON: Sodium thiosulfate is of doubtful value even against real arsenical dermatoses.

DR. JOEL SCHWEIG: Extensive scleroderma is reported to have been arrested in its progressive tendencies by the administration of tachysterol. In other cases patients have benefited from sympathectomies. Of course, the indications for the various methods of treatment are not yet well known.

A Case for Diagnosis (Gumma of the Penis?). Presented by DR. MOSES SILVERMAN.

Mr. M. M., a Polish tailor aged 67, noted a small sore on the shaft of his penis seven weeks ago. He applied solution of hydrogen peroxide, but the area swelled and became larger. He went to a private physician, who gave him four injections in the hip and one in the arm. Recently, the entire glans penis has become painful, purulent and ulcerated. There is no difficulty of micturition.

Examination of the penis shows irregular, fungating, purulent ulcerations of the entire glans and the distal segment of the shaft. There is a foul-smelling mucopurulent discharge. The inguinal nodes can be palpated, but they are small (pea sized) and painless.

The Wassermann reaction of the blood was 4 plus. The Ducrey and Frei tests elicited negative reactions. A urinalysis did not reveal albumin, sugar or abnormal microscopic elements.

Biopsy of a specimen from the skin of the glans penis showed the following conditions: The specimen consisted of a roughly ovular piece of pearly gray tissue which had a serpiginous red surface. Microscopically the superficial portion of the epidermis showed decided acanthosis and hypertrophy, with the rete pegs dipping deeply into the subcutis. Ulceration of the epidermis was noted, with large collections of polymorphonuclear leukocytes undergoing disintegration and with lymphocytes and many plasma cells present. The subcutis contained a dense infiltrate of lymphocytes and plasma cells, and some productive reaction was noted in fibrosis of connective tissue elements. Although the epidermis was decidedly hypertrophic, malignant changes were not observed. This lesion was consistent with the diagnosis of syphilis.

DISCUSSION

DR. JOEL SCHWEIG: The picture is suggestive of phagedenic chancre with a severe acute inflammatory reaction. I suggest that an aspiration be made from the regional gland, where spirochetes may be found.

DR. HERBERT LEAVITT (by invitation): The only reason this was not done was that the inguinal node on either side is too small, and that too is why it is felt that the lesion is not a chancre. When the man first appeared, about ten days ago, he had practically no adenopathy, and the lesion was no worse than it is today. I have never seen a chancre that was not accompanied with large inguinal nodes.

MORRIS M. ESTRIN, M.D., *President*

SEYMOUR H. SILVERS, M.D., *Secretary*

May 16, 1943

A Case for Diagnosis (Psoriasis? Parakeratosis Scutularis?). Presented by DR. ABRAHAM WALZER.

J. B., a boy aged 9 years, first came to the dermatologic clinic of the Beth Moses Hospital a few days ago. There was a familial history of atopy, the patient himself having had infantile eczema and asthma. The present rash is about six weeks old. It began on the abdomen and gradually spread.

At present he shows the rash on the trunk, neck, upper extremities and thighs. Except for a tiny spot under the left eye and one between the third and fourth left fingers, the face, hands, legs and feet are free of lesions. The nails are not affected, and the mucous membranes of the mouth are clear.

The rash consists of patches which vary in size from that of a pea to that of a dime. It apparently began as a faint pinkish spot, increased in size and elevation and became surmounted by a dry and extremely adherent scale. When the boy was first seen, a few days ago, the scale was greatly elevated and hard and could be grasped between the fingers. On forcible removal a bleeding surface remained.

The patch shows many patent follicles. The scales heap up, forming a raised, hard mass, usually in the center of the patch, so that the outer third of the lesion, which is also raised and red, is free of scales and appears to form a raised ring around a central scaly patch. In some instances, the entire patch is covered with these adherent scales.

DISCUSSION

DR. MAX LERNER: The scales appeared just as Dr. Walzer described them. When I tried to remove some of them, there was no bleeding. A few of the lesions appeared to be edematous; some simulated psoriasis.

DR. JACOB SKEER: This appears to be a psoriasiform eruption. I cannot place it as psoriasis. It does not seem to fit into the picture of parakeratosis scutularis. I observed a patient with that disease about ten years ago, and the crust, or hyperkeratotic scale, that this patient presents is not at all comparable with that of parakeratosis scutularis. The latter disease has round deep red edematous and erythematous lesions with thick scales which cannot be picked off. The under surface has tiny beadlike projections fitted into the follicular openings. The lesions are not itchy. I see nothing like that tonight.

DR. E. ALMORE GAUVAIN: The distribution is suggestive of pityriasis rosea, but the small lesions with fine scales covering the entire affected area are not typical of this disease. Furthermore, on removal of scales, bleeding points are seen. The lesions with thicker scales indicate that the patient has scratched them. I believe the disease is psoriasis.

DR. MORRIS M. ESTRIN: In infancy this patient had infantile eczema and asthma. Can this eruption be some form of eczema?

DR. LESSER M. FRUCHTBAUM: I agree with the diagnosis of pityriasis rosea. The only unusual feature is that the lesions are raised and are more infiltrated. All the characteristics of pityriasis rosea are present: the oval shape, the scales which cover the centers of the lesions and the typical distribution along the cleavage lines of the body. The fact that the patient is asthmatic and had infantile eczema may explain the unusual features of the lesion.

DR. ABRAHAM WALZER: I should like to discuss the character of the lesion. For one thing, all these lesions are alike. They start alike and progress alike. The primary lesion can be seen as red spots, which soon become covered with dry scales. They may increase in size and after they are healed become flat. These lesions and their course certainly do not fit in with pityriasis rosea. I believe that parakeratosis scutularis is probably a type of psoriasis. They both have some common histologic factors, and clinically there is a type known as rupioid psoriasis. The histologic examination may clear up the diagnosis.

A Case for Diagnosis (Parapsoriasis en Plaques? Mycosis Fungoides?). Presented by DR. DAVID M. DAVIDSON.

P. C., a man aged 45, stated that he has had the present eruption for the past four or five years. It never disappeared during this time and itched intermittently. It is paler in the summer. Various-sized erythematous patches with a fine superficial scaling are present on the extremities and abdomen, mostly confined to the thighs. One patch on the right thigh became slightly infiltrated.

The microscope examination of a section taken a year ago shows a slight acanthotic epidermis with a scant and loosely attached horny layer and a normal granular layer. There were mild intercellular and intracellular edema of the prickle cell layer, a normal basal layer and interstitial edema in the subpapillary layer of the cutis, with dilatation of the vessels and a slight infiltrate of small round cells.

DISCUSSION

DR. DAVID M. DAVIDSON: I saw this patient twice last year and once this year. On the right side there was one patch that looked more or less infiltrated. From this fact, I believe the possibility of mycosis fungoides should be considered.

DR. JACOB SKEER: This patient has had the rash for the past five years. The lesions have a deep red flush in the wintertime, and they become slightly infiltrated and scaly during cold weather. The patient has complained of itching at times, but as a rule there is no itching. With the history of infiltration, mycosis fungoides must be considered. There is a history of chancre and bubo occurring some time ago, but the Wassermann reaction of the blood last week was negative.

DR. JOEL SCHWEIG: Of late a great deal has been added to the knowledge of such eruptions and one is a little more guarded in the prognosis. Eruptions like these may linger for some time and present themselves as so-called parapsoriasis or fixed eruptions. They may not yield to therapy. They give little discomfort until such time as the picture changes completely. Infiltrations of the entire plaque may spring up, associated with severe itching and definite changes in histologic sections. At that stage the diagnosis of parapsoriasis becomes untenable and mycosis fungoides is in evidence. I do not subscribe to the theory that in all cases parapsoriasis represents the early stage of mycosis fungoides. Parapsoriasis is a definite clinical entity and should not be discarded and deprived of its established position. The final word will always rest with the pathologist. The case merits further study.

DR. E. ALMORE GAUVAIN: I agree with Dr. Schweig.

DR. LESSER M. FRUCHTBAUM: I consider parapsoriasis en plaques not an entity in itself but a stage of development of mycosis fungoides. I therefore favor the diagnosis of the first, or premycotic, stage of mycosis fungoides. Although it cannot be proved histologically that this is mycosis fungoides, one is justified in accepting the clinical diagnosis of mycosis fungoides in its initial stage.

DR. DAVID M. DAVIDSON: Today this eruption is suggestive of mycosis fungoides, but last year this could not have been said. There was no itching or infiltration. The patches were smooth, and slight scaling could be produced only by scratching. I was inclined then toward a diagnosis of parapsoriasis. If the microscopic study proves it to be mycosis fungoides, it will be an example of the type of mycosis fungoides which starts with the clinical picture of parapsoriasis.

CHICAGO DERMATOLOGICAL SOCIETY

MICHAEL H. EBERT, M.D., *President*

MARCUS R. CARO, M.D., *Secretary*

April 21, 1943

Necrobiosis Lipoidica Diabeticorum (Numerous Lesions of Lower Extremities). Presented by DR. CLARK W. FINNERUD.

Miss S. G., aged 22, who has diabetes, was first seen yesterday, because of an eruption of the lower extremities of four years' duration. She states that the majority of the lesions have at one time or another broken down to form ulcers. Her diabetes is said to be under control at this time.

There are present several dozen finger nail–sized to coin-sized plaques on the lower extremities, most of them with yellowish centers and erythematous to violaceous borders. A number of the lesions have crusting centers.

DISCUSSION

DR. C. W. LAYMON, Minneapolis, Minn.: In most cases necrobiosis does not respond to any form of treatment. I recently saw 1 patient, however, in whom it healed spontaneously. This woman had the ulcerated type, with large lesions on the legs, and rather severe diabetes. After pregnancy the diabetes improved considerably and the cutaneous lesions healed completely. There was no remaining infiltration, and the scars were soft, smooth and white.

DR. MAURICE OPPENHEIM (by invitation): The presented patient has classic necrobiosis lipoidica diabeticorum. Many physicians confuse this well defined clinical entity with granuloma annulare. Everybody who has seen both diseases must agree that there is not the slightest similarity between them. The histologic changes are totally different, too.

DR. C. W. FINNERUD: This patient was unusual because of the large number of lesions, all of which are small and either ulcerated now or with a history of having been ulcerated. The diabetes, though severe, is under control.

Moeller's Glossitis. Presented by DR. F. E. SENEAR.

Mrs. S. K., aged 45, has had trouble with "sore mouth" for the past nineteen months. She first notices a burning sensation of the tongue, and then red spots appear on the tip of the tongue and later on the palate and buccal mucosa. The patches become bright red and gradually subside. While the course of the disease is irregular, the attacks are apt to last about two weeks; then there are no symptoms or signs for seven to ten days, after which a new group of lesions appear.

The patient has been given vitamins, although she does not know just what type, and she has been given some injections, presumably for anemia, and probably some type of liver therapy. These injections were given twice a week for a period of five months.

She complains of excessive soreness when she attempts to swallow solid food. She states that before this trouble developed she had been accustomed to subsist largely on bread, butter and coffee, eating but little meat, drinking no milk and taking few fruits or vegetables.

DISCUSSION

DR. EDWARD A. OLIVER: I saw this patient with Dr. Senear this morning. She presents a typical and illustrative case of Moeller's glossitis, the type that Dr. Fred Harris so aptly described. In most cases there is severe and persistent burning. Possibly with the new interest in vitamins and endocrine substances an etiologic factor will be discovered for this unusual glossitis. As it is now, Moeller's glossitis is simply a descriptive term.

DR. M. H. EBERT: Perhaps some of the members saw the patients who were presented in the past by Dr. Frederick Harris. I wonder whether their disease resembled that of the patient presented today.

DR. OLIVER S. ORMSBY: On inquiry, this patient stated that she had much pain. Pain was a striking symptom in the original cases reported by Dr. Harris. After his early report we all observed some cases. So far as I know there have been none presented before this society for several years. This disease may be a form of avitaminosis. If a vitamin deficiency is found, the problem of treatment of this serious form of glossitis will be greatly improved. The patients usually are in poor physical condition because of lack of proper nourishment due to pain which interferes with the taking of food.

DR. F. E. SENEAR: As Dr. Ormsby said, patients with this disease have not been presented before the society for some time. Those who were here a number of years ago became familiar with it when Dr. Frederick Harris presented a number of patients and read his paper. The patches of this patient are not so bright as is often the case. Usually they are a raw beefy red, and she states that as a rule her lesions are of that appearance.

She has one thing that has been pointed out in the descriptions of this disease, that is, a tendency to pallor of the palate and a yellowish discoloration of the hard palate. The soft palate showed that feature well. She also has the shiny or varnished tongue which has been described in the literature as occurring in Moeller's glossitis. When I saw the other patients I looked up the condition in Prinz and Greenbaum's textbook, and they emphasized what Dr. Oliver and Dr. Ormsby brought out, that while the condition is similar to Hunter's glossitis of the type seen in pernicious anemia it is a definite clinical picture. The feeling is growing that both of these types of glossitis develop on some type of avitaminosis as a background. This woman was given vitamins but did not know which ones they were. Twice a week for five months she also received injections of some type of substance, which I assume was liver, since she said she was treated for "anemia or something." I presume she had a mild anemia but not of the pernicious type.

Sarcoidosis. Presented by DR. M. H. EBERT and (by invitation) DR. M. OTSUKA.

Mrs. C. G., a Negro woman aged 46, first noticed a painless enlargement of the left little finger sixteen years ago. In the last six years the other fingers, excepting the left ring finger, have been similarly affected. At times they feel rheumatic, and in the past year she has had rheumatic pains in the knees. A red spot appeared on the end of the nose twelve years ago and gradually enlarged. The one under the right eye appeared within the past year. Her appetite and digestion are good. She has lost no weight, although she has always been undersized. She was married eighteen years ago; her husband and two children are living and well. She had one miscarriage, and one child died at 10 months of age. She is still menstruating. There is nothing of significance in the family history.

On the end of the nose there is a large lobulated smooth mass 2 inches (5 cm.) across and elevated ½ inch (1 cm.). The color is darker than the normal skin. The mass is smooth in consistency but gives the impression of being somewhat cystic. A similar tumor the size of a dime is located under the right eye and is elevated ¼ inch (0.5 cm.). There is a bean-sized hemispheric tumor on the lower lip near the right commissure. There is a nodule the size of a split pea in the left upper eyelid and two smaller ones on the right cheek. There is an almond-sized movable gland anterior to the right ear and in the right postauricular region. Both epitrochlear glands are as large as a hazelnut, and there is moderate cervical and inguinal adenopathy. The spleen is palpable 1 inch (2 cm.) below the costal margin. The tonsils are enlarged but not congested. There is a firm spindle-shaped enlargement of all the fingers except the left ring finger. In some fingers the distal phalanx is more involved and in others the proximal. A roentgenogram of the digits disclosed an enlargement of the affected phalanges, with osteoporosis. The lower third of the left tibia is also much enlarged, and changes were shown on roentgenographic examination. A roentgenogram of the lungs showed no significant changes.

The Kahn reaction of the blood was negative. There was no significant change in the hemogram. The urine was normal. The von Pirquet test (1:1,000) elicited a negative reaction. An examination of the eyegrounds showed nothing abnormal.

Histologic examination of sections from the nodule on the right cheek showed typical sarcoid structure, groups of epithelioid cells surrounded by lymphocytes. Degenerative changes were present in the nasal lesion. Newly formed connective tissue formed the septums, and the epithelial cells were degenerated. Material removed from a phalanx of the right hand showed typical sarcoid structure.

Sarcoidosis. Presented by DR. THEODORE CORNBLEET and (by invitation) DR. M. OTSUKA.

T. L., a Negro aged 22, was well until the spring of 1940, when night sweats following an evening rise of temperature, together with loss of weight, palpitation and generalized weakness developed. He was hospitalized for nine months, after which he was discharged with a diagnosis of "nervous breakdown." Tubercle bacilli were not found in his sputum, nor was there any evidence of tuberculosis in the lungs on eight roentgenographic examinations. Since he has been out of the hospital, his only complaints are shortness of breath of two years' duration and intermittent night sweats.

Six months ago he noticed multiple painful pea-sized nodules on the extensor surfaces of both arms. These lesions have not increased in size or in number since the onset.

In March 1943, when the patient was being inducted into the Army, the examiners found an "aneurysm" during the roentgenographic examination of the chest. He was advised to seek medical aid and entered Cook County Hospital for study and therapy.

There is no history of tuberculosis in his immediate family or among relatives, but he was exposed to a friend with tuberculosis for three months in 1939. This friend died in 1941.

The patient presents twenty to twenty-five pea-sized, discrete, almost painless flat nodules on the extensor surfaces of both arms. There are one to two similar but smaller lesions on both forearms. The lesions are wholly intracutaneous and are slightly lighter in color than the surrounding skin. The patient also presents moderate generalized adenopathy. The heart is not enlarged, but there is a prolonged systolic murmur at the apex. On examination the lungs were normal, and the liver and spleen were not palpable.

On examination the blood was normal, and the Kahn reaction was negative. The blood chemistry, including values for total protein, albumin and globulin, was normal. The urine was essentially normal. A tuberculin test (old tuberculin in a dilution of 1:1,000) elicited a positive reaction. A similar test produced a negative reaction one week ago. The electrocardiogram was normal. Roentgenographic examination of the chest showed a widespread infiltrative process in both lungs with the greatest density in the hilar regions. There was a widening of the right mediastinum beginning in the upper aortic region and extending up above the clavicle. The roentgenologist felt that the changes observed might be on a tuberculous basis but that sarcoidosis must be considered. Roentgenographic examination of the hands, feet and long bones showed them to be essentially normal. Repeated examinations of sputum and of washings from the stomach did not reveal tubercle bacilli.

DISCUSSION OF CASES OF SARCOIDOSIS

DR. H. E. MICHELSON, Minneapolis: The cases of these 2 patients are instructive to physicians who are particularly interested in sarcoidosis. They demonstrate that one cannot tell from a microscopic section what the clinical picture is going to be.

The woman has had symptoms for sixteen years, and at the present time the visible involvement is extensive; nevertheless, her general health is not disturbed at all. The man has had symptoms only for the last three years, but his health has been disturbed greatly, and it will not surprise me if the termination is fatal. These cases demonstrate that sarcoid is a systemic disease and that the way the patient reacts to it decides the prognosis.

Does Dr. Nomland think these patients have the same disease as the Negroes who have the small nodular lesions which are called sarcoid-like tuberculosis? I should like to disagree with the opinion expressed that sarcoid occurs preeminently in Negroes, for certainly over the years there have been about as many white persons as Negroes shown before this society.

DR. RUBEN NOMLAND, Iowa City: I should like to call attention to the fact that in Chicago the syndrome which is called sarcoidosis occurs almost entirely among Negroes. I think the disease needs a great deal more study than has been given to it in the past. I do not believe that one should assume that this is a tuberculous process, though the probabilities are that it is. I do not think that the literature that has grown up around sarcoid in the Negro should be connected with

the literature that has grown up about sarcoid on the continent of Europe, which deals mostly with the disease in white persons. I think there may be such a disease, to which the Negro is unusually susceptible. Until some one proves that it is tuberculous, opinion concerning this clinical disease that is seen in the Negro should be held in abeyance.

DR. CLARK W. FINNERUD: This patient of Drs. Ebert and Otsuka presented conditions almost identical to those in Dr. Ormsby's patient who was shown repeatedly at these meetings many years ago, the chief difference being the character of the lesions of the nose, those in today's patient appearing somewhat keloidal whereas Dr. Ormsby's patient presented nasal lesions resembling lupus pernio. In the case of Dr. Ormsby's patient I made a search at great length for tubercle bacilli and failed to find them (ARCH. DERMAT. & SYPH. **4**:342-352 [Sept.] 1921).

About five years ago Jordan and Osborne reviewed everything published on the Besnier-Boeck syndrome at that time. A large percentage of the cases had been thoroughly studied. As I remember they found that this process proves to be tuberculous in perhaps half or less than half of the cases and that some undetermined bacteriologic agent may be capable of producing the same clinical picture in the remaining cases.

DR. S. W. BECKER: I have presented a patient twice before this society. This woman had superficial lesions of the arms and face which showed sarcoid structure under the microscope. She was helped twice by gold therapy, and on the basis of the so-called anergy instead of using the usual dilution of tuberculin I tested her with purified protein derivative which corresponded to a dilution of 1:250 or 1:500 of old tuberculin. A tremendous reaction developed. So while she may not have typical sarcoid she did not have the lack of reactivity which usually occurs in these patients.

DR. RUBEN NOMLAND, Iowa City: I think the reaction to tuberculin in sarcoid as seen in the Negro is frequently positive with relatively strong dilutions, and a 1:100 dilution of old tuberculin may be necessary to produce a reaction. However, a positive reaction is frequently followed by a focal reaction in the lesions, which sometimes is extremely disturbing. While there is evidence to show that tuberculin has some beneficial effect on sarcoid as seen in the Negro, it must be given with care.

I think sarcoid in the Negro will hardly fully correspond to Boeck's original description, in which he described lesions of the lymph node and skin. Later, other investigators added to the syndrome. The lesions observed in the Negro correspond in many ways with the sarcoid syndrome, and in that way I think the disease is sarcoid. Contrary to its behavior in cases of sarcoid in white persons the tuberculin reaction in Negroes is apt to be positive. The number occurring in white persons and in Negroes is hard to say. It is known that syphilis has definite characteristics, such as annular secondary lesions, in Negroes; why should not the sarcoid reaction also be characteristic in Negroes? In Chicago I should say that two thirds of the patients with sarcoid presented before this society were Negroes. I think their form of the disease is analogous to the disease in the white race; I cannot say it is identical.

DR. THEODORE CORNBLEET: One could easily dismiss the cutaneous lesions of Dr. Ebert's patient as keloids, so closely did they simulate them. Recently I saw a patient with lesions very much like these keloid-like ones, but they proved to be leiomyomas. My patient's mediastinal shadow was long and narrow, and part of it was cast by what appeared to be an aneurysm. This manifestation was brought about doubtless by the pressure of heavy infiltrate at both hili. I have been interested in the state of immunity present in sarcoidosis and have given attention to the response to tuberculin in its presence. In a series of 10 subjects I have been disappointed by the positive reactions to tuberculin of the entire group. Two of them gave negative responses on their first tests, but the responses on the second trials were positive. Old tuberculin in a dilution of 1:1,000 was used. This should not mean that negative reactions to tuberculin are not frequently found in sarcoidosis. If my experience is worth anything, however, it shows that negative responses are not the rule.

DR. M. H. EBERT: My patient was presented principally for the osseous lesions and for the unusual hypertrophy of the lesions on the nose. The spina-ventosa-like enlargements of the fingers and toes are well known in sarcoidosis. They have been described for years, more frequently in connection with lupus pernio. Dr. Ormsby and Dr. Finnerud have described such a case. However, a few biopsies have been made from the bone. We took this opportunity to get material from the medulla. I think it will be agreed that while the sections are not perfectly stained they showed typical sarcoid structure.

Schaumann, the Swedish investigator, in an article in *Annales de dermatologie et syphiligraphie* in 1919 said that osseous changes of three types were found roentgenologically in a patient with extensive sarcoidosis whose toes had been amputated; the conditions observed on roentgen examination checked pathologically. They were, first, a diffuse osteoporosis; second, cystlike lesions of the type called osteitis tuberculosa multiplex cystodes of Jüngling, and, third, sarcoid structure demonstrated histologically in bones which were normal roentgenologically. Schaumann's paper was written twenty years ago. It could be that roentgen technic has been so improved that later replacement of bone marrow by sarcoid structure could now be shown. The interesting feature was that the long bones were involved as well as the phalanges. In most reports the changes of sarcoid are said to be in the metacarpals, metatarsals and phalanges. In this case there is extensive involvement of the left tibia, extending almost the entire length of the bone. The two types of change described by Schaumann, the cystic type and the more diffuse osteoporosis, are well seen.

The hypertrophic nature of the lesion on the nose was striking and unusual. The suggestion made today that this might be somewhat of the nature of a keloid was partially borne out by the biopsy. Nests of epithelioid cells were partially degenerated, and they were surrounded by newly formed connective tissue. The flatter lesion on the cheek, which was only slightly hypertrophic, showed a typical sarcoid structure.

I do not think that either this case or the case presented by Dr. Cornbleet gives any new information on the causation of Besnier-Boeck sarcoid.

Scleroderma (Extensive Unilateral Morphea of Band Type). Presented by DR. CLARK W. FINNERUD and (by invitation) DR. HAROLD OMENS.

Mrs. M. K., aged 44, came to the dispensary complaining of hemorrhoids and varicose veins. The examining physician noticed brown atrophic patches and bands on the right side of her trunk and extremities, in which she stated she had no interest. She said these areas were devoid of subjective symptoms and had been present for about twelve years. She thought that the original one followed a burn.

The eruption consists of a brown atrophic band 1 inch (2 cm.) or more in width, extending from the top of the right shoulder down the lateral surface of the arm to the right elbow. There is a similar band about 3 inches (7.5 cm.) wide, composed of individual finger nail–sized atrophic brown macules extending from the right scapula to above the right breast. On the right breast there are three coin-sized lesions, which are of ivory color in the center with an erythematous and slightly violaceous periphery. Another band extends from the sacrum over the right trochanteric area.

The Wassermann and Kahn reactions were negative.

Histologic examination showed swollen but not sclerotic collagen bundles, in places fragmented elastic tissue, slightly effaced papillae and a mild perivascular and periglandular round cell infiltration.

Generalized Progressive Scleroderma. Presented (by invitation) by DR. MAURICE OPPENHEIM and DR. D. COHEN.

T. M., a white man aged 54, presents a generalized involvement of his skin of two years' duration, which is more pronounced in the face and hands.

The face is masklike, with the normal wrinkles gone. The fingers of both hands are kept in a position of flexion, and complete closure of the hand is impossible. All movements of the upper and lower extremities are impeded. The skin is pale and is spotted with depigmented areas. It is almost impossible to raise the skin with the thumb and finger.

The patient cannot open his mouth widely or turn his neck without producing much pain. It is difficult for him to chew his food vigorously or to breathe deeply, and at times he has trouble in swallowing. The mucous membranes are pale and anemic, and the frenulum appears shortened.

The disease began on the hands about two years ago. After he had had pneumonia, pains developed in nearly all the joints. The wrists were swollen, but fever was not present. When the patient recovered from the pneumonia he noticed that the left arm and left side of the face seemed reddened. This redness gradually disappeared, and a hardening of the skin became evident. This hardening has spread over the entire body during the past fifteen months. There has been a loss of weight of 45 pounds (20.4 Kg.) in two years.

Urinalysis showed no albumin or sugar, but in the twenty-four hour specimen the calcium amounted to 0.198 Gm. On examination the blood was normal. Chemical examination of the blood showed 9.7 mg. of calcium and 5.2 mg. of phosphorus per hundred cubic centimeters of blood and an alkaline phosphatase activity of 2.5 units. The basal metabolic rate was +1 per cent. The Kahn reaction was negative.

A roentgenogram of the chest (from the Mayo Clinic) showed multiple calcified pleural plaques, with thickening of the pleura at the base of the left lung; there were nodular lesions at both first interspaces with some extension into the base, probably tuberculosis. Roentgenograms of the wrists and hands showed destruction of the distal phalanges of the first and third digits, with destructive arthritis involving the distal interphalangeal joints and the ulnar carpal joints. Calcification of the arteries was noted. There was absorption of the distal end of the terminal phalanx of both thumbs.

Treatment has consisted of rest, massage and baths, 1 grain (0.06 Gm.) of desiccated thyroid daily and application of boric acid ointment locally.

DISCUSSION OF CASES OF SCLERODERMA

DR. HARRY R. FOERSTER, Milwaukee: Drs. Finnerud and Omens' case is interesting because of three unusual features: the unilateral zoster-like distribution of the lesions on the chest, which lends support to the contention that the sympathetic nervous system is concerned in the causation of scleroderma; the typical morphea lesions that are present on and above the right breast, and the grouped bandlike lesions on the hips and buttocks.

DR. STEPHEN ROTHMAN (by invitation): When questioned, the patient of Drs. Oppenheim and Cohen states that he has severe difficulties in swallowing. In collaboration with Drs. J. R. Lindsay and F. E. Templeton, I have studied the esophageal changes in 5 cases of diffuse scleroderma by roentgenography, esophagoscopy and biopsy of specimens from the esophagus. In all cases, the changes were strikingly uniform and identical with those reported earlier by Fessler and Pohl, from Dr. Oppenheim's department in Vienna. The biopsies indicate primary changes in the connective tissue similar to those of scleroderma. Apparently these changes lead to loss of peristalsis in the lower two thirds of the esophagus, with some atony of the cardiac sphincter, regurgitation of gastric content into the esophagus, resulting esophagitis and in some cases chronic ulceration in the lower third. These changes seem to be constant and early signs of diffuse scleroderma. In all our 5 cases the disease fits the description of "acrosclerosis." However, we felt that what has been designated as "acrosclerosis" is identical with what has been called diffuse or generalized scleroderma with sclerodactylia.

DR. WILLIAM GEORGE BROCK, Winnipeg, Manitoba, Canada (by invitation): Once I ventured into a study of dermatomyositis and scleroderma. From the series of cases which I studied, I came to the conclusion that in many cases dermatomyositis of the chronic type ends as scleroderma. I have always felt that there is a profound connection between scleroderma, dermatomyositis and sclerodactylia. The first thing that struck me about the patient presented by Drs. Oppenheim and Cohen was the profound atrophy of the shoulder girdle. If specimens for biopsy were taken from the pectoral group of muscles, I am sure some perivascular infiltration and thickening would be found, as in all cases of chronic dermatomyositis. In dermatomyositis, the musculature of the esophagus can be affected, which will cause difficulty in swallowing. Dr. Rothman has just mentioned involvement of the esophagus in scleroderma.

I think there is too much of a tendency to classify sclerodactylia as a separate entity rather than as a part of a diffuse disease in which all the mesodermal tissues are involved in varying degrees.

DR. M. H. EBERT: I agree with Dr. Brock that the man had a peculiar habitus, bending his head forward. I was also interested to see the scars on the back of the hands, where deposits of calcium had sloughed out.

DR. C. W. LAYMON, Minneapolis: Both Dr. Rothman's and Dr. Brock's discussion interested me. One should realize that diffuse scleroderma involves all the connective tissues in the body. Since reading Sellei's articles on acrosclerosis and after talking to Dr. O'Leary, I think that acrosclerosis represents a mild type of diffuse scleroderma which begins on the hands and face and possibly on the feet, remaining there rather than progressing like the usual diffuse sclerodermas. Raynaud's phenomena are present in acrosclerosis, and they may be noted also in more extensive types of diffuse scleroderma.

DR. THEODORE CORNBLEET: In the first patient the right axilla, the side on which the lesions appeared, perspired profusely, whereas the opposite axilla was dry. This patient offers a splendid opportunity for the

study of the influence of the nervous system in scleroderma by means of this anomalous sweating manifestation.

DR. MAURICE OPPENHEIM (by invitation): The case of Dr. Finnerud impressed me, but I do not agree with the diagnosis scleroderma circumscriptum. The skin of the involved area is bluish, not white or yellowish; instead of increased thickness the finger feels a hole in the skin, a defect characteristic of atrophia maculosa cutis; there is no lilac ring, and the location is unilateral. I believe this is a case of atrophia maculosa cutis. Those who will look over my monograph on atrophy of the skin (in Jadassohn, J.: Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 8, pt. 2, pp. 605 and 624) will find similar pictures. As I stressed in my various papers about the cause of macular atrophy of the skin one of my proofs for the congenital cause is the unilateral location, as is the case with unilateral nevi.

Regarding the discussion about Sellei's acrosclerosis, it is my opinion that this is not a separate disease. In almost every case of scleroderma diffusum the fingers and hands are found to be involved as in our patient, and a differentiation from acrosclerosis is clinically impossible. The history of our patient is interesting. Two years ago he had pneumonia, and after the pneumonia redness of the face and arms developed; afterward these red portions turned to a dry, anemic, waxlike condition, such as are observed in scleroderma, starting, as usual, from the face and hands. In spite of that I do not believe that dermatomyositis is identical with scleroderma. Scleroderma is a disease of the connective tissue which involves the joints, the muscles and also the mucous membranes.

Dr. Rothman mentioned the occurrence of esophageal strictures. I observed a patient with scleroderma in my department in Vienna; my colleagues and I thought first of a carcinoma of the esophagus. Roentgenographic examination revealed a stricture due to sclerodermatic changes in the wall of the esophagus. My assistant, Dr. Fowler, published a report of that case. In patients with scleroderma diffusum one often finds the joints to be affected. When scleroderma started in this patient, he had polyarthritis; almost all the joints were stiff and painful. It may be that such moments throw a little light on the etiologic factors of diffuse scleroderma.

DR. C. W. FINNERUD: The lesion on the breast was the one on which we performed the biopsy. That lesion was the size of a silver quarter and had an erythematous periphery and an ivory-colored smooth center. It was the only new lesion on the body. Histologically it showed everything compatible with that stage. The other lesions amounted merely to hyperpigmented depressed scars. I was interested in Dr. Oppenheim's remarks, but I feel certain that the patient I presented had circumscribed scleroderma.

Paraffinoma. Presented by DR. M. H. EBERT and (by invitation) DR. M. OTSUKA.

C. H., a white woman aged 72, presents firm masses in the cheeks. She states that forty years ago she worked as a model. After an illness she looked emaciated, and to insure her position she had paraffin injected into her cheeks. The masses so deposited caused no discomfort and enlarged slowly until the last few years, when the areas became reddened and the enlargement noticeable. She came to Cook County Hospital because of bronchopneumonia and arteriosclerosis.

There is an irregularly oval mass in each cheek measuring about 1 by 2 inches (2.5 by 5 cm.). The one on the left has smaller satellite nodules extending toward the ramus of the mandible. These masses are firm and are movable on the deep tissues but attached to the dermis. The skin over them is slightly reddened.

Histologic examination of a section removed showed the epidermis flattened and atrophic. The changes in the corium were in three zones. The upper zone was characterized by a perivascular round cell infiltrate. The second zone, which occupied the midcorium and the level of the sweat glands, was beset with numerous empty spaces of varying size separated by a cellular connective tissue and histiocytes. The lower zone of the corium was greatly hypertrophied and made up of many strands of connective tissue with few empty spaces.

A specimen stained with Weigert stain showed senile elastosis of the upper part of the corium and complete absence of elastic tissue throughout the rest of the corium.

Acrodermatitis Chronica Atrophicans. Presented (by invitation) by DR. STEPHEN ROTHMAN and DR. A. B. HENNINGSEN.

R. O., a housewife of Polish origin aged 55, stated that an eruption started in 1940 with inflammatory scaling lesions and fissuring on the dorsa of the feet. Similar lesions on the hands and knees appeared in December 1942. When first seen in the outpatient department, on Feb. 8, 1943, she presented a diffuse subacute scaling dermatitis of the legs and forearms. This inflammatory eruption cleared in three weeks with bland local treatment.

In addition to the dermatitis, the patient presents loose atrophic spots with a bluish hue on the knees and elbows, an atrophic stripe on the right thigh and some spreading along the ulna on the left elbow. Because of the loose atrophy, deep veins are visible and subcutaneous fat lobules protrude. There is stiff fibrotic atrophy on the dorsa of the feet.

The menopause occurred when the patient was 52 years old. Physical and laboratory examinations have yielded results that are not contributory.

Acrodermatitis Chronica Atrophicans. Presented by DR. M. H. EBERT and (by invitation) DR. M. OTSUKA.

R. A., a man aged 66, was born in Russia near Vilna. His present eruption started as a redness of the dorsa of the feet twenty-five years ago and gradually extended upward. He states that a similar redness appeared on the back of the right hand five years ago and cleared up. It then appeared on the left hand and extended upward. There is no sensation except some itching of the ankles. His family and personal history are not significant.

The skin of the lower extremities presents the usual transparent atrophy, through which the veins are plainly visible. The right ankle and the backs of the feet are somewhat thickened and scaly. The peripheral circulation is poor, and the legs become bluish when dependent but blanch when raised. The atrophy extends anteriorly to the groins and posteriorly over the sacrum to the level of the twelfth rib. Only one hand and arm, the left, are affected. Here the atrophy extends up to the posterior surface of the region of the triceps muscle. At its upper margin there are some blotchy redness and slight infiltration. The vaccination scar at the border of the atrophy is infiltrated, yellowish and morphea-like. A moderately infiltrated dull red band extends from the left elbow almost to the wrist. Similar infiltrated patches appear over each patella. On the flexor surface of the left wrist there are several match head–sized flat-topped, ivory yellow sclerodermoid papules resembling morphea.

The biceps and triceps reflexes in the left arm were greatly reduced. Otherwise the reflexes, sensation, sense of position, etc., were normal. There were no significant changes in the eyegrounds. The leukocyte count was 5,200, and the differential distribution was normal. The Kahn reaction was negative.

DISCUSSION

DR. HARRY R. FOERSTER, Milwaukee: In Dr. Ebert's case attention should be called to the scleroderma-like changes in the area of the vaccination scar on the arm and to the atrophic lesions on the left wrist. This scleroderma-like feature was not apparent in the first case but was definite in the second.

DR. MINNIE O. PERLSTEIN: How frequently does acrodermatitis occur in males?

DR. M. H. EBERT: It is my impression that in the literature acrodermatitis is twice as frequent in females. I can recall several cases, however, in which the patient was a man.

DR. J. H. MITCHELL: At the Rush Medical Clinic I recall having seen several men with acrodermatitis.

DR. STEPHEN ROTHMAN (by invitation): I have always been under the impression that this disease had some relation to the menopause. The eruption of the woman we presented started, like that of many others, at the beginning of the menopause.

DR. M. H. EBERT: My patient is 66 years old, and he has had acrodermatitis for twenty-five years. There is a male menopause, but this would be a prolonged one. I think the interesting features of my cases have been brought out by Dr. Harry Foerster and require no repetition. One other feature, the fibrous band on the affected elbow extending almost to the wrist, was interesting.

Epidermodysplasia Verruciformis. Presented by DR. LEONARD F. WEBER.

A man aged 50 has had lesions on the backs of the hands and forearms for many years. According to his recollection there has been no recent change, and he is certain that new lesions have not appeared recently. Subjective symptoms have been absent. He is interested in the removal of the lesions. He has many lesions on the hands that are wartlike in appearance. Several lesions were removed for microscopic study.

DISCUSSION

DR. RUBEN NOMLAND, Iowa City: Drs. Waisman and Montgomery (Verruca Plana and Epithelial Nevus, ARCH. DERMAT. & SYPH. **45**:259 [Feb.] 1942) took up the consideration of the clinical and microscopic features of three diseases, epidermodysplasia verruciformis, ordinary flat warts and epithelial nevi. They called attention to the facts that all three diseases cause lesions on the dorsum of the hand and that they can be differentiated on clinical or histologic lines. They called particular attention to the fact that epidermodysplasia verruciformis presented a peculiar change on histologic examination of the stratum corneum which they called a "basket weave" pattern which, they stated, was somewhat similar to that of the flat juvenile wart. I believe that on the basis of the clinical appearance, but probably more on the microscopic appearance, which is that of a pure keratosis, this disease should be classified as acrokeratosis verruciformis (Loveman, A. B., and Graham, P. V.: Acrokeratosis Verruciformis [Hopf], ARCH. DERMAT. & SYPH. **43**:971 [June] 1941) rather than epidermodysplasia verruciformis. Incidentally, within the past several weeks I have seen a lesion exactly like that of this patient, displaying the development of epidermoid epithelioma.

DR. M. R. CARO: Waisman and Montgomery and Loveman and Graham in their recent papers have pointed out the difficulties often encountered in differentiating between epidermodysplasia verruciformis, acrokeratosis verruciformis and verruca plana on histologic grounds alone. In acrokeratosis verruciformis there is less tendency to vacuolation of the epidermal cells and there is usually no "basket weave" arrangement of the scale, both being found in the other two diseases to be differentiated.

Of greater help in distinguishing these dermatoses are the clinical features. The lesions of verruca plana are autoinoculable, a tendency which has never been demonstrated in lesions of the other two diseases. Furthermore, lesions of verruca plana disappear in time. In epidermodysplasia verruciformis lesions appear early in life, are more generalized and appear also on the face and neck. They show a great resemblance to verruca plana, but there are usually a few lesions that look like verruca vulgaris. In this disease alone of the three under consideration is there a tendency for the development of epithelioma. In acrokeratosis verruciformis the lesions are present on the dorsal surface of the hands and feet and there are often associated keratotic lesions on the palms and soles. According to all these criteria the lesions in the case presented today do not fit perfectly into any one of the three diseases mentioned.

DR. L. F. WEBER: Dr. Caro has stated my views, and I do not think I can improve on his statement. I believe that this case has stimulated some thought among dermatologists, who see patients from time to time with lesions on the back of the hand. I am sure that this will follow, because several men have brought up this point today. Eventually, if it is established that epidermodysplasia verruciformis is autoinoculable then it will be accepted that it is an ordinary wart. This is the main point that was brought out in Waisman and Montgomery's article. I am still willing to accept the diagnosis of epidermodysplasia verruciformis or verruca plana but not that of acrokeratosis verruciformis of Hopf.

Keratoma Dissipatum Palmoplantare (Brauer) (Keratoderma Papulosum). Presented by invitation) by DR. STEPHEN ROTHMAN and DR. A. B. HENNINGSEN.

P. K., a white man aged 62, a mechanic, was admitted to Albert Merritt Billings Hospital on March 25, 1943 because of mitral stenosis and insufficiency, auricular fibrillation and myocardial insufficiency.

He had had cutaneous lesions on the palms and soles since adolescence. The appearance of these lesions had not changed since. He did not take arsenicals in drops or pills. As far as he knows there has been no similar disease in other members of his family. However, his father had "calluses." There are numerous translucent hyperkeratotic papules and nodules, 2 to 5 mm. in diameter, on the palms and soles; they are round, oval or irregularly shaped. Some of them are globular. Most of them have depressed centers. Those with central pits show a hyperkeratotic border 2 to 3 mm. wide. On the soles the lesions are more dense, less globular and flatter, and some groups are surrounded by common hyperkeratotic walls.

Histologic examination of a section removed showed excessive lamellated hyperkeratosis, considerable thickening of the granular layer and thickening of the mucous layer with disappearance of the interpapillary pegs in the center.

DISCUSSION

DR. S. W. BECKER: I think this is a clearcut example of what Buschke illustrated in the Ikonographia many years ago. He called it keratoderma punctatum. This patient said that these lesions appeared around the age of 14, which is about the time a person starts to do manual labor and the thickening of the skin of the palm occurs and these lesions appear.

DR. E. A. OLIVER: I think this picture strongly suggests arsenical keratoses of the palms and soles. The patient states that these lesions developed when he was 13 or 14 years of age. I realize that there is no history of arsenical ingestion, but I have in mind the cases presented by Dr. Ford in which an entire family suffered with arsenical keratoses, a result of drinking contaminated water.

DR. C. W. FINNERUD: Dr. Oliver expressed my thoughts. I inquired from the patient as to whether he had had injections or medicine by mouth over a long period. He did not remember. Of course drinking water containing arsenic could account for the lesions. Clinically I thought these were arsenical keratoses.

DR. THEODORE CORNBLEET: I thought that one point against the consideration of an arsenical keratosis was the absence of any melanosis in this patient. I do not know that it is necessarily present, but I believe the association is common.

DR. MAURICE OPPENHEIM (by invitation): I agree with the diagnosis of Dr. Rothman. Clinically the lesions differ from arsenical warts on the palms and soles. If one will examine the patient's lesions one will find that there is in the center of the hyperkeratosis a smooth depression. This is not present in arsenical warts, which show a rough, wartlike aspect. Buschke's and Brauer's cases belong to the large group of cases of the same type of dyskeratoses. Haxthausen described such changes in women in the menopause (keratoderma climactericum). All possible transitions exist, from keratoderma punctatum to keratoma hereditarium palmare et plantare, and all these forms belong to the congenital dyskeratoses.

DR. STEPHEN ROTHMAN (by invitation): In preparing this presentation, I collected about twelve synonyms, all designating circumscribed keratotic lesions of the palms and soles. Buschke and Fischer described these lesions first in 1910 as keratoderma maculosum disseminatum. Two years later Brauer described it under the name I used today. The adjectives "punctatum" and "papulosum" were applied later on. All the cases of the "Brauer" type start in the second decade of life, when mechanical factors due to the profession come into life, as Dr. Becker pointed out. Clinically, all these lesions start with a small globular cornified papule. Later, the upper part becomes indented, so that a horny plug is formed at the upper pole, as described by Brauer. This horny plug falls off and leaves a lesion with central pitting and a hyperkeratotic border 2 to 3 mm. in width. There is no history of arsenical intake, and I believe that arsenical keratosis can be excluded merely on the basis of the clinical appearance. Histologically, we found thickening of the horny layer of the stratum granulosum and stratum mucosum and no changes in the connective tissue.

A Case for Diagnosis (Lupus Erythematosus? Syphilis?). Presented by DR. M. H. EBERT.

P. S., a white man aged 49, presents an eruption on the left frontotemporal area of the scalp, the right cheek, the lips, the mucous membrane of the mouth, the chin and the ears. The eruption is said to have started on his lips and chin a year ago. Shortly thereafter lesions occurred on the ears and scalp. More recently there have been lesions on the cheek. These lesions are not pruritic.

The patient had a penile lesion twenty-five years ago, while he was still in his native land, Greece. A diagnosis of syphilis was made, and he received an injection of arsphenamine and thirty "hip shots." Since then his health has been good.

The lesions are red papules, from the size of a split pea to that of a pea, which in many instances form arcs with central clearing. On the lips there are papules up to the vermilion border, and on the vermilion border of the lower lip there is a thin paper-like scale. Leukoplakic changes of the commissures of lips and buccal mucosa are present.

The Kahn reaction was 2 plus.

Histologic examination of one of the papules showed definite follicular plugging with keratin. The epidermis was slightly atrophic. Small collections of round cells were seen in the subpapillary layer of the corium. There was clumping of the elastic tissue of the senile type.

DISCUSSION

DR. F. W. LYNCH, St. Paul: While the clinical appearance suggests several possibilities, I think syphilis is the most satisfactory clinical diagnosis. That diagnosis is also supported by the history and the partially positive serologic reaction. On the other hand, the histologic appearance does not suggest syphilis, and it is difficult to correlate the section with the clinical appearance. In this case I should disregard the section and base the diagnosis on the clinical impression.

DR. C. W. FINNERUD: I should not be surprised if neoarsphenamine or a preparation of bismuth would clear this eruption.

DR. H. E. MICHELSON, Minneapolis: I think one should bring out that the microscopic diagnosis of a long-standing syphiloderm is not reliable, since the histologic structure changes decidedly in lesions that have been present a long time and are regressing.

DR. LOUIE WINER, Minneapolis: Histologically the characteristics that favor a diagnosis of lupus erythematosus are follicular dilatation, atrophy of the epidermis and presence of islands of round cell infiltration in the cutis. However, in the section there are large numbers of sebaceous glands which have been completely atrophied in this stage of the development of lupus erythematosus. In view of the fact that the sebaceous glands are not involved, I should diagnose the facial lesions as syphilis.

DR. M. H. EBERT: My clinical impression was about as described. The lesions on the lips showed collodion-like changes on the vermilion border of the lower lip. The involvement of both ears and the lesions on the scalp impressed me clinically as lupus erythematosus, but the changes in the buccal mucosa were not characteristic. They might be a nonspecific leukoplakia. Histologically, I agree with Dr. Winer. My impression is that the section looks more like lupus erythematosus. I did not pay much attention to the atrophy of the elastic tissue in a patient of this age. There is no dissolution of the malpighian layer. The problem will be solved readily because a little antisyphilitic treatment will determine whether it is lupus erythematosus or syphilis.

A Case for Diagnosis (Fungous Infection? Mycosis Fungoides?). Presented by DR. HERBERT RATTNER and DR. MAURICE DORNE.

F. B., a seaman aged 48, presents an erythematosquamous eruption of about eight months' duration.

The first lesions appeared on the left wrist and calf and then spread rapidly, to involve almost the entire cutaneous surface of the trunk and limbs within a period of four months. The eruption causes discomfort even including only when the patient is in bed under covers. The general health has been unaffected.

The trunk and limbs are covered almost entirely by a blanket of an erythematous scaly sheet. Scattered throughout, there are several coin-sized oval and irregular sharply defined atrophic areas that are depigmented.

The Kahn reaction was negative. The urine was normal. Examination of the peripheral blood showed: hemoglobin content, 94 per cent; erythrocytes, 4,720,000, and leukocytes, 6,300, with a differential count of 59 per cent polymorphonuclears, 4 per cent eosinophils, 1 per cent basophils, 30 per cent lymphocytes and 6 per cent monocytes. Chemical examination of the blood showed: nonprotein nitrogen, 40 mg.; creatinine, 1.6 mg., and sugar, 71 mg. per hundred cubic centimeters of blood.

Histologic examination of a specimen from the back showed a moderate degree of intracellular and intercellular edema of the epidermis with a thin scale and an intact basal layer. There were narrow mantles of lymphocytes about the superficial blood vessels, and there was a densely packed mass of cellular infiltrate containing many small blood vessels that embraced each of the two hair follicles in the section.

DISCUSSION

CAPTAIN J. E. GINSBERG, Ft. Sheridan, Ill.: I should like to know if potassium hydroxide preparations were made of specimens from this patient's lesions. Clinically, the eruption looks a little like early mycosis fungoides, but it is more probably a generalized tinea. We had a man with a similar eruption at Fort Sheridan, and we did not believe it possible that we should find fungi in the scrapings. We found them easily, much to our surprise, and the man's eruption cleared in a short time.

DR. M. H. EBERT: I was impressed by the poor contour, an outline such as one sees in the pictures of Tokelau ringworm (tinea imbricata). Was an examination of the scales for fungi made?

DR. STEPHEN ROTHMAN (by invitation): I understand that fungi were not found, and therefore I should like to suggest the diagnosis of seborrheic dermatitis. There is an erythematosquamous eruption with sharply circumscribed circular borders. The scalp is involved; the scaling is branny, and all features are compatible with the diagnosis of seborrheic dermatitis.

DR. HERBERT RATTNER: I do not know that I can answer the questions. We saw the patient for the first time a week ago. In the clinic we discussed the possibility of mycosis fungoides if we could rule out fungous infection. Thus far we have been unsuccessful in our attempts to recover fungi from the scrapings.

Local Arterial Embolism. Presented (by invitation) by DR. MAURICE OPPENHEIM and DR. D. COHEN.

A. S., a white man aged 40, presents a bluish retiform network, the size of a man's hand, over the left hip. There are no scales, erosions or crusts on the surface of the skin. A slight edema is present, and the lesion is painful to touch. He feels pain on bending the lower extremity.

On Saturday, April 17, he received an injection of mercuric salicylate, and immediately thereafter had a dead feeling in the left leg. In one hour he had a severe pain and could not move or bend the left lower extremity. He was forced to go to bed. He had chills and fever and felt sick. After a hot bath Sunday morning he felt better, and Sunday afternoon he noticed the blue spots. The cause of this eruption is an arterial embolus produced by the crystals of the insoluble mercuric salicylate injected accidentally into a small artery.

DISCUSSION

DR. D. COHEN (by invitation): This patient was sent to us by a physician who was treating him for syphilis. In the course of an injection of a mercurial this condition resulted. It is interesting that the embolus came on so suddenly, with the patient experiencing sharp pain, feeling ill and having fever for several days. The appearance of the local lesion as seen today developed twenty-four hours after the injection.

DR. M. H. EBERT: I have always thought such lesions interesting because the pattern of the blood vessels is similar to that seen in livedo reticularis.

DR. MAURICE OPPENHEIM (by invitation): Gamel, an American surgeon, published the report of a case of deep gangrene involving the gluteal muscles after injection of a mercurial. Skolnik reported 2 cases. Gamel found among 50,000 cases 5 cases of arterial embolism. Freudenthal was the first to publish an article about this eruption. This arterial embolism more frequently follows injections of an insoluble bismuth preparation than of a mercurial because of the more numerous and larger bismuth crystals suspended in oil. At first the artery is filled with the insoluble suspension; then the crystals are transported in the capillaries and arterioles and block them. The pain which follows appears immediately or hours later. I have observed cases in which the patients fell immediately, as in an apoplectic stroke, so severe is the pain. The question arises whether such an occurrence can be avoided by the preventive measures used to avoid an intravenous injection while the usual intramuscular injection is being made in the gluteal area. I do not think the arterial embolism can be avoided. If the arterial blood does not pour out through the needle immediately by aspiration or when the syringe is removed from the needle, then one does not have a sign that the point of the needle is within the artery. Sometimes the injection is made into the arterial wall; then it takes time before the embolism appears, with the first symptom of pain. The immediate pain is caused by the direct injection into the artery. After the pain the network of bluish spots appears, which sometimes turns to a deep gangrene. The patients feel sick and have a rise of temperature and chills. They must be placed in bed and are unable to work. Recovery takes a long time, sometimes six to eight weeks.

A Case for Diagnosis (Amyloidosis Cutis? Lichen Simplex Chronicus?). Presented by DR. DAVID V. OMENS and (by invitation) DR. HAROLD D. OMENS.

J. N., an Italian-American jail guard aged 21, presents an eruption of one and one-half years' duration on the medial and lateral aspects of the right leg. There are single, large, irregularly shaped areas composed of various-sized papules and nodules, somewhat translucent, with normal skin, which is somewhat pigmented, between the lesions; the patches are extended by way of the periphery.

The Kahn reaction was negative. The blood on examination was normal.

DISCUSSION

DR. RUBEN NOMLAND, Iowa City: In cases of chronic itching patches of the leg which resemble lichen simplex chronicus, the question of localized amyloidosis should be considered. However, localized amyloidosis is bi-

lateral, and the elementary lesion is different, being a small papule around a hair follicle which may become a vesicle-like lesion, and later on somewhat resembles lichen simplex chronicus. With a lesion such as presented today, however, the recognition of amyloidosis should not be difficult, because amyloid could easily be seen in an ordinary stained specimen. It was not present in this case. The study of localized amyloidosis particularly as it affects the legs is interesting. I suppose I have seen biopsy specimens from a dozen or more persons who had either lichen simplex chronicus of the hypertrophic type or hypertrophic lichen planus. I think it is much more difficult to differentiate between these two diseases, but in amyloidosis amyloid can be differentiated by the local injection of congo red. The histologic section in this case conforms with a diagnosis of lichen simplex chronicus with moderate hypertrophy.

Cutaneous Tuberculosis (Sarcoids? Tuberculids? Lupus Vulgaris?). Presented by DR. J. H. MITCHELL.

Mrs. R. H., aged 27, has had an eruption for one year. The lesions appeared simultaneously on the forehead, cheeks, nose and brow, and later one lesion appeared over each scapula. Enlarged glands developed in the cervical, axillary and inguinal groups. The spleen became enlarged, and her temperature averaged 99 F. daily. She was treated in her home city with intramuscular injections of protein and locally on the lesions of the forehead and right scapular region with solid carbon dioxide. No cutaneous tests were made at any time.

The patient was seen in consultation with Dr. Samuel Taylor at the Presbyterian Hospital on March 18, 1943, at which time she was given roentgen therapy to the enlarged glands. Roentgenograms of the chest were made, which were reported to show normal conditions. The general health is excellent. There has been a gain of 8 pounds (3.6 Kg.) since the last visit, one month ago.

On April 21 her blood pressure was 134 systolic and 72 diastolic; the hemoglobin content was 84 per cent, and there were 8,300 leukocytes per cubic millimeter, with 56 per cent polymorphonuclears, 38 per cent lymphocytes, 3 per cent basophils and 3 per cent eosinophils. The erythrocyte count was 4,680,000.

In two histologic sections (one from each half into which the nodule was cut) there was a change in the dermis involving a proliferation of epithelioid cells, giant cells and fibroblasts. These formed small nodules of irregular size and shape adjacent to hair follicles. These nodules were circumscribed by normal connective tissue of the dermis and were subdivided into poorly formed tubercles, partially demarcated by sparse infiltrations of lymphocytes, but there were no complete zones of lymphocytes about the nodules. The giant cells were more like the Langhan's type than the foreign body type. The epidermis was only mildly hyperplastic, with slight elongation of the rete pegs.

Examination of eight sections showed no acid-fast bacilli. In spite of their absence, however, on presumptive evidence the lesion was considered to be tuberculous.

DISCUSSION

DR. C. W. FINNERUD: I had the privilege of seeing these sections a week or so ago, but I did not see the patient until today. From the sections I concluded that it was fair to diagnose the disease as sarcoid rather than as lupus vulgaris or some other form of tuberculosis cutis. I was particularly interested in the fact that the patient had an enlarged spleen and generalized lymphadenopathy. I understand that roentgenograms of her chest showed nothing abnormal. I was perplexed when I saw her today, since the lesions were not grossly of the type I had expected to see. The clinical picture is extremely unusual. I am still inclined to feel that this is a variant of sarcoid, but I am far from certain.

DR. M. R. CARO: I could not make an absolute diagnosis in this case. I thought that the histologic picture was more consistent with the diagnosis of sarcoid than anything else, but the clinical picture was unusual.

DR. H. E. MICHELSON, Minneapolis: This patient has a lesion which may be interpreted as either lupus vulgaris or sarcoid, but in my opinion it is lupus vulgaris. The section indicates that to me. The process is diffuse and does not have the sharp demarcation and lobulation seen in sarcoid. I believe too many diagnoses of sarcoid are made histologically, and for my own part the section must be characteristic before I am able to accept a microscopic diagnosis of sarcoid. In this patient the soft lesion, the positive results of diascopic examination and the section make the diagnosis of lupus vulgaris tenable.

DR. M. H. EBERT: I agree with Dr. Michelson; I think the term sarcoid histologically should be definite. There must be nests of epithelioid cells with surrounding lymphocytes. If there is more tissue to be obtained something might be ascertained by inoculation of animals to see whether the bacilli are living in the tissue or whether this is a hematogenous "id" of some type.

DR. C. W. FINNERUD: I think sarcoid can present the changes mentioned. Sarcoid is encountered which is characterized by complete absence of giant cells, absence of plasma cell infiltration and absence of connective tissue walling off between the nests of epithelial cells. I think sarcoid varies almost as much as does lupus vulgaris. In these sections—and I looked at them rather carefully—there was no necrosis. I have seen sarcoid nests follow along the hair follicle and periglandular areas. I am certainly not saying positively that this is sarcoid, but I am not sure that it is not.

DR. M. R. CARO: While the usual histologic picture of sarcoid is that of a tubercle composed entirely of epithelioid cells with no giant cells and no surrounding zone of round cells, there are many cases in which variations are shown.

DR. LOUIE WINER, Minneapolis: In lesions of lupus vulgaris, particularly early lesions, one frequently finds superficial nests of epithelioid cells and an occasional giant cell without other significant changes.

DR. M. H. EBERT: This is largely a matter of definition, if one cares to extend the definition of sarcoid so that the histologic picture includes heterogeneous masses of lymphocytes, epithelioid cells and giant cells. I do not think that corresponds to Boeck's original description.

DR. J. H. MITCHELL: The only gratification I am getting out of the discussion is that others are as puzzled as I am. The lesion on the left side of the forehead and the one over the right scapula had been modified by treatment with solid carbon dioxide. The one excised from the left scapular region had some suggestion of granuloma annulare. The lesion on the left cheek had typical apple jelly color under the diascope, and I considered it to be lupus vulgaris.

Melanoma. Presented (by invitation) by DR. ERWIN P. ZEISLER and DR. SAMUEL M. BLUEFARB.

M. K., a girl aged 6 years, presents a peculiar slate blue bandlike tumor of half the wall of the chest, 3 to 4 inches (7.5 to 10 cm.) wide and deeply infiltrated with bluish black nodules. It appeared about four to

six weeks after birth, at which time it was smooth and slate blue and about the size of a palm. About two and one-half years ago it became nodular and has gradually extended to its present size. The nodular masses in the present patch have increased in size. The patch has not increased in size during the past year.

DISCUSSION

DR. S. W. BECKER: The clinical appearance, the bluish color of the lesion and the nodulation along with the history that it has been present since birth would make a diagnosis of blue nevus. These nodulations would probably show on microscopic section either masses of melanoblasts or nonpigmented cells which Masson prefers to diagnose as schwannoma. I did not see any evidence of malignant degeneration, though cases have been reported in which a blue nevus has undergone malignant degeneration. I have never encountered such a case.

DR. M. H. EBERT: You would not consider it dangerous to perform a biopsy and make a positive diagnosis?

DR. S. M. BLUEFARB (by invitation): Our primary aim in presenting this case was for therapeutic suggestions. There was no doubt in our minds regarding the diagnosis, and as a result we were afraid to perform a biopsy. However, if Dr. Becker thinks it is perfectly safe, we will do so.

DR. S. W. BECKER: I think in all such cases one should be prepared to proceed further if the biopsy specimen shows any malignant change. The patients should also be watched carefully. Personally, I am of the opinion that a lesion is not particularly harmed, at least immediately, by the removal of a biopsy specimen. I think the many deaths reported resulted from the fact that metastases had already taken place and were not a result of the removal of a specimen for biopsy.

DR. M. R. CARO: May I ask what would be the advantage of performing a biopsy? The histologic diagnosis in this case is purely of academic interest. If the lesion is malignant, nothing further can be done at present to benefit the patient. If malignant degeneration should supervene at any time later in life, the one who performs the biopsy would have to shoulder the responsibility for the eventual fatal outcome. I advise leaving the lesion alone and keeping the patient under observation.

DR. M. H. EBERT: On the other hand, a biopsy would relieve the parents of uncertainty regarding the child's chance for life.

DR. J. H. MITCHELL: I agree with Dr. Caro. If the lesion is a melanoma, it will kill her anyway; if it is not, why interfere, inasmuch as it is on a covered portion of the body? I should not touch it.

A Case for Diagnosis (Pemphigus Vulgaris? Pemphigus Erythematosus? Dermatitis Herpetiformis?). Presented (by invitation) by DR. STEPHEN ROTHMAN and DR. A. B. HENNINGSEN.

W. J., a salesman aged 62, noticed the appearance of pustules and crusts on the right side of the face six months ago and on the neck and penis a few days afterward. Later, new lesions appeared on the scalp, trunk and extremities. Painful lesions of the buccal mucosa were noticed a few weeks ago. The lesions were weeping and have been itching mildly. The patient was admitted to the Frank Merritt Billings Hospital on April 7, 1943. On his admission irregularly scattered pustular and crusted lesions with little tendency to grouping were present on the scalp, face and extremities. Erosions were seen on the buccal mucous membranes, lip and nares and on the penis. Some of the crusting pustular lesions were slightly infiltrated. A few days after his admission the appearance of vesicles and bullae was observed. They were 3 to 20 mm. in diameter, and some had a slight erythematous border while others had none. The bullae were partly tense and partly flaccid. Their originally clear contents soon became pustular. There is no Nikolsky sign on normal skin.

Physical examination did not reveal any significant change of internal organs.

The Wassermann and Kahn reactions were negative. Hematologic examination gave normal results. A smear from a bulla with clear contents showed polymorphonuclears 6 per cent, lymphocytes 70 per cent and eosinophils 24 per cent. A high eosinophil count was repeatedly found in fluid from the bullae. A patch test with 20 per cent ointment of potassium iodide yielded a bullous reaction.

Histologic examination showed bullous formation with detachment between the basal layer and the malpighian layer and a perivascular infiltrate in the upper part of the corium consisting of lymphocytes and polymorphonuclear leukocytes and a few eosinophils. Culture of bulla fluid yielded hemolytic staphylococci but no fungi.

The patient is being treated with acetarsone.

DISCUSSION

DR. E. A. OLIVER: I saw this patient in my office about three weeks ago. At that time he had raw, oozing, crusted lesions on the cheeks and forehead, several patches of the same type on the thighs and a raw, oozing, denuded area involving the head of the penis. On that occasion I made a diagnosis of pemphigus. He seems much worse today, and I see no reason to change my diagnosis. He is the third patient with pemphigus I have seen since the first of February.

DR. E. A. OLIVER: I cannot subscribe to recent statements that pemphigus may be getting less virulent and less frequent. I have 1 patient now with severe pemphigus who is going downhill rapidly in spite of treatment with acetarsone and blood transfusions.

DR. H. E. MICHELSON, Minneapolis: I am glad to hear Dr. Oliver say that he does not think pemphigus is changing for the better; after Dr. O'Leary and others expressed the opinion that they had seen amelioration in the severity of pemphigus my colleagues and I had the opposite experience, 3 patients succumbing rapidly after the onset of the disease.

DR. MAURICE OPPENHEIM (by invitation): This case is interesting because the lesions started on the cheek and on the penis; four months later the rash broke out on the skin. In my opinion this is the usual time between the primary lesion in pemphigus and the generalized rash. In the treatment of pemphigus vulgaris with acetarsone one sometimes sees exacerbations after the first doses; I consider these as a kind of Jarisch-Herxheimer reaction and as a proof of the effect of the acetarsone. If the treatment is continued, the improvement is seen later. It is necessary to give the acetarsone over a long period, sometimes 200 or 300 tablets of 0.25 Gm. each, before definite improvement is seen.

DR. M. H. EBERT: I think many patients with pemphigus when first seen present features of dermatitis herpetiformis, including the presence of eosinophils in the circulating blood and in the fluid from bullae as well as severe itching and occasionally polymorphism of the cutaneous lesions. However, the disease eventuates as pemphigus vulgaris, and the outcome is fatal. I think that the patient presented today has pemphigus vulgaris and the end, in spite of any medication, including acetarsone, will be fatal.

DR. MINNIE O. PERLSTEIN: I have been trying to figure out more proof for the diagnosis of pemphigus. To fit in with a diagnosis of dermatitis herpetiformis, this patient has some new lesions on the thighs which he says have been there a few days. These inflammatory lesions, he says, itch severely, which would be a criterion in defense of a diagnosis of dermatitis herpetiformis. The lesions are tense, with an edematous periphery and crusted center. The man is not especially toxic. He has a high eosinophil count, which I was taught does not occur in pemphigus. If it does, it is not common. I still think he has Duhring's disease, unless the criteria for a diagnosis of dermatitis herpetiformis have changed.

DR. J. H. MITCHELL: For a number of years Dr. Ormsby and I observed a patient who had typical dermatitis herpetiformis with eosinophilia, and he died rather suddenly of pemphigus. In dermatitis herpetiformis eosinophils may be entirely lacking both in the blood and in the contents of vesicles. The borderline between dermatitis herpetiformis and pemphigus is sometimes narrow. I can recall case after case demonstrated in these meetings in which we discussed pro and con the diagnosis and the diagnosis was not settled until years later. I presented a case as one of pemphigus vulgaris with excellent photographs and proper legends. Later, after the patient had had a complete remission the same case was presented with equally good photographs as one of dermatitis herpetiformis. I keep the two sets of photographs as museum pieces to remind me that the diagnosis of the bullous dermatoses is fraught with the greatest difficulty.

DR. HERBERT RATTNER: It is my impression that when acetarsone effects good results in treatment of pemphigus, it does so quickly. However, my experience with its use has not been extensive.

DR. STEPHEN ROTHMAN (by invitation): As Dr. Oliver said, this patient is rapidly deteriorating. His condition became worse before we started to give him acetarsone. Hence we can say he is worse despite the treatment with acetarsone but possibly not because of it.

It was clearly brought out in the discussion that the differential points in favor of dermatitis herpetiformis, such as the positive result of an iodide test and a high content of eosinophils in blood and blister fluid cannot be regarded as decisive if the clinical appearance is definitely that of pemphigus, as it is in this case.

Concerning the effect of acetarsone, I agree with Dr. Rattner. I have seen cases in which there was immediate response and others in which there was no response at all.

Editorials

A NEED FOR MORE DERMATOLOGISTS IN THE WAR

It has been known for some time that more medical officers are needed by the Armed Forces. It was not generally known, however, whether more dermatologists could be utilized. To obtain information on this question, letters were written to the Surgeons General of the Army and Navy, stating that answers would be cited editorially in the ARCHIVES. Satisfactory replies were soon received. Rear Admiral Ross McIntyre, Surgeon General of the Navy, wrote as follows on Jan. 20, 1944: "There are now eight medical officers of the regular Navy and seventy-eight of the Naval Reserve who are qualified in dermatology and syphilology." He added that not all of these had been certified by the American Board of Dermatology and Syphilology. He made the important statement that "there is a need for approximately fifty additional dermatologists and syphilologists in the Medical Corps of the Navy."

The need for more dermatologists in the Army was indicated in a letter dated January 19 from Colonel J. R. Hudnall for the Surgeon General of the Army. The letter read: "More dermatologists are needed in the Army Hospitals, especially in this country. It is not practicable to state any given number, the number that may be accepted being influenced by the age limits and other factors that affect appointments."

In view of these authoritative statements, it is hoped that a sufficient number of dermatologists will volunteer for active service to fill the necessary quota.

THE CAMPAIGN AGAINST LEPROSY IN CUBA

Our Cuban colleagues are to be congratulated on a new attempt to eradicate leprosy in their country. A board of trustees has been formed for "The Prophylaxis of Leprosy, Cutaneous Diseases and Syphilis." The board is composed of the president, Dr. Antonio M. Valdés Dapena, who is professor of therapeutics at the University of Habana; the general director, Dr. Vicente Pardo Castelló; the assistant director, Dr. Ramón Ibarra Pérez, and Drs. Roberto Ruiz Montaño, Braulio Sáenz y Ricart, Ismael Ferrer y Pulgarón and Francisco R. Tiant. An official journal will be published quarterly, the first issue having appeared on Jan. 1, 1944.

The board has built a sanatorium of three hundred and fifty beds for lepers, in the province of Oriente. It has 300 acres, and the hope is to form an agricultural colony around the present group of buildings. The board also operates three dispensaries for lepers in the city of Habana and four others scattered over the republic. A census of lepers in the republic has been started, 1,700 persons having been listed up to the present. The board is also fortunate in having the necessary funds to build a research institute costing $80,000, to be erected in the near future in the Vedado section of Habana.

Correspondence

RATIONAL PHARMACEUTIC TREATMENT OF DISEASES OF THE SKIN

To the Editor:—The reference to treatment of ringworm of the feet in a recent article by Herman Goodman (ARCH. DERMAT. & SYPH. **49**:16 [Jan.] 1944) prompts me to write a few lines on the treatment of the macerated type of this disease, usually rebellious to treatment. I have been using daily applications of pure coal tar, with excellent results in practically every case, for many months. The coal tar is applied with a wooden applicator dipped with cotton, which is pressed slightly against the mouth of the bottle to avoid excess; care is taken to reach the bottom of the interspace, and the applicator is held there until the parts become black. A small pledget of cotton is then inserted between the toes and allowed to remain in place. No washing with soap and water is permitted, a new coat of tar being applied over the previous one every day. Once a week the parts are rubbed with 70 per cent alcohol and dried and a fresh coat of coal tar is applied. The white spongy or hyperkeratotic and macerated mass gradually disappears, and the skin between the toes returns to a normal state after about four weeks of this treatment. On the eczematoid areas elsewhere on the feet a mixture of equal parts of ointment of benzoic and salicylic acid and White's coal tar ointment (crude coal tar, zinc oxide and petrolatum) is useful. I believe coal tar one of the most useful local agents in the treatment of ringworm of the feet.

V. PARDO-CASTELLO, M.D., Habana, Cuba.

University of Habana.

EXPERIENCE OF A DERMATOLOGIST IN THE SOUTHERN PACIFIC

The following letter was a personal one to the editor. It is considered of sufficient interst to publish:

"I have been on this island for the past six weeks, acting as consultant. I am on the go from place to place constantly, have visited all the hospitals in the whole area and am now on my way around again. There is a wealth of dermatologic material here, and the diseases are the same as in the states, but there are many differences. Almost all diseases of the skin seem to become worse on the patients' arrival here. Acne often assumes the cystic type; all eczematoid eruptions are made worse, and even psoriasis usually becomes severe. The bulk of the hospital admissions are for fungous diseases of the feet and hands which have become eczematized. These are largely due to overtreatment. I have also seen a considerable number of eczematous eruptions due to local use of sulfonamide compounds. Several of them have been explosive, resulting in exfoliative dermatitis. Probably of greatest interest is the large number of cases of lichen planus hypertrophicus. During the last month, I have counted 15 cases of severe involvement. They all follow the same pattern, starting suddenly with lesions resembling prurigo nodularis and then rapidly becoming violaceous and confluent over large areas. Small satellite lesions are typical flat-topped shiny papules. The mouth and lips are always involved. I saw one medical officer in whom the whole buccal membrane and tongue resembled thick leukoplakia.

Of course, I am visiting the native villages and native hospitals every chance I get. Yaws and tinea imbricata are almost universal. So far I have not observed either of these diseases among our troops except 1 remarkable instance of tinea imbricata in a Negro.

The dispensaries here are filled with patients with impetigo bullosa of the type we see at home in infants—small, superficial, flaccid vesicles which are superficial and easily ruptured and heal without crusting. They affect the axillary and inguinal regions, especially tinea circinata and Trichophyton purpureum infections. The so-called tropical ulcers are merely pyodermas following abrasions, insect bites, etc. The local use of the sulfonamide drugs for the infections results in sensitization of many persons with eczematoid eruptions.

In spite of the mosquitoes, bugs, snakes, wet clothes, mosquito repellants, mosquito bars and occasionally having to dive for a fox hole, etc., I am enjoying my work more than any I have had in the Army. I also feel that I am doing much more good here near the field of activities than I could do on the mainland or in the states."

JOHN V. AMBLER, Major, M.C., A.U.S.

Book Reviews

The Modern Treatment of Syphilis. By Joseph Earle Moore, M.D., with the collaboration of Jarold E. Kemp, M.D., and others. Second edition, second printing. Price, $7. Pp. 717, with 109 illustrations. Springfield, Ill.: Charles C Thomas, Publisher, 1943.

This excellent book on the modern treatment of syphilis is the second printing of the second edition. The first thirty-two chapters are without change. Chapter 33, on Intensive Arsenotherapy of Early Syphilis, has been rewritten, and chapter 34, on Venereal Disease Control in the Army and Navy, has been added. The book was written with the collaboration of Drs. Kemp, Eagle, Padget, Goodwin and Reynolds, all of whom are members of the faculty of the Johns Hopkins University.

The book is a presentation of the current practice and results over a period of thirty years in the syphilis division of the medical clinic at Johns Hopkins Hospital. Throughout his treatise the author emphasizes that "syphilis is primarily a medical, rather than a urologic, dermatologic, ophthalmologic, neurologic or pediatric problem," and is definite in his opinion that the major problems of diagnosis, management, treatment and complications should be handled or guided by the syphilologist of wide experience.

The monograph is written from the point of view of the author and his collaborators and from the liberal use of the scientific contributions of the Cooperative Clinical Group, in which material relative to the diagnosis and treatment of syphilis is pooled, studied and agreed on by all the members.

This book provides valuable information in a simple and clearcut manner as to what should be done for patients with the various types of syphilis. The original thirty-two chapters were either rewritten or changed extensively in the first printing of the second edition. They form an accepted standard for physicians who treat or teach others how to treat syphilis.

In the chapter on the intensive arsenotherapy of early syphilis the author gives a good presentation of the available data regarding the clinical modifications of the intensive therapy and the results obtained. He devotes a sufficient number of pages to the toxicity of this form of intensive arsenotherapy and the relatively high mortality rate as compared with that of the weekly continuous antisyphilitic therapy advocated by the Cooperative Clinical Group. Charts outlining various forms of schedules for intensive arsenical treatment with their margins of safety are presented. A word of caution from the author to the effect that intensive arsenotherapy should be carried out only in large teaching hospitals, where laboratory and other facilities are adequate to permit physicians to anticipate and cope with toxic reactions, would have been in order.

The last chapter, on venereal disease control in the Army and Navy, is timely, because this is still a problem of greatest importance, especially in time of war.

The format is excellent; the bibliography is extensive, and the cross index is a valuable asset to ready reference.

"The Modern Treatment of Syphilis" by Moore is still the outstanding contribution in this field. This volume should be available for ready reference in every hospital, syphilis clinic, physician's office and medical library.

An Introduction to Medical Mycology. By George M. Lewis and Mary E. Hopper. Price $6.50. Pp. 342, with 77 pages of illustrations. Chicago: The Year Book Publishers, Inc., 1943.

In his review of the first edition of this book (ARCH. DERMAT. & SYPH. **41**:1198 [June] 1940) the reviewer wrote: "This volume will be welcomed by mycologists, dermatologists and physicians in general as the first really practical book on medical mycology in the English language." This prediction was fully realized, and the second edition became necessary only four years after the publication of the first.

The new edition, which is 27 pages larger than the first, follows the same plan and is divided into two parts. The first deals with the clinical, theoretic and experimental aspects of fungous diseases, and the second, with laboratory methods. Among many valuable additions made in the two parts of the book the following are found: a photographic reproduction of Sabouraud's classification of the ringworm fungi from his famous treatise "Les teignes"; remarks about oxygen requirements of fungi and about pigment production as a metabolic process; discussion of experimental fungous infection in animals; instructions to the parents of patients with ringworm of the scalp, and descriptions of tinea nodosa (piedra), histoplasmosis, rhinosporidiosis and the mycoses of the lungs.

In the second part of the book, devoted to the laboratory methods, several additions have been made: for instance, a formula for preparation of an anaerobic medium for isolation of actinomycetes and a more detailed and enlarged description of the technic of the passive transfer test and the specific tests with coccidioidin, blastomycin and sporotrichin.

The systematic description of characteristics of pathogenic fungi has been enlarged. Twenty-five species are discussed instead of twenty-two, as in the first edition. Microsporon ferrugineum, Histoplasma capsulatum and Rhinosporidium seeberi have been added.

The number of illustrations in the second edition has been increased by including the following: clinical pictures of tinea imbricata and nocardiosis; comparative morphology of cultures of several fungi on mediums containing different sugars; Microsporon ferrugineum in a hair; cultures and culture mounts, and Histoplasma capsulatum in cultures and culture mounts. Two colored plates reproduce in accurate natural colors the cultures of several important fungi.

The reviewer wishes the second edition of this book the success which it fully deserves.

News and Comment

DIAGNOSTIC AND REGISTRY CENTER FOR FUNGOUS DISEASES OF MAN

A grant from the American Foundation of Tropical Medicine has been given to a group of investigators at Duke University to provide a diagnostic and registry center for fungous diseases of man. The service includes: (1) identification of fungi from patients suspected of having fungous disease; (2) pathologic study and registry of biopsy and autopsy materials from patients suspected of having fungous infection (this is not to conflict with the diagnostic and registry services maintained by the several branches of the armed forces); (3) preparation of complete sets of cultures of pathogenic fungi, to be sent on request to any medical school for use in teaching courses in tropical medicine.

By special arrangement, (a) serologic tests will be made for certain of the fungous infections, and (b) vaccines for cutaneous tests and therapeutic use in certain of the fungous infections will be sent on request.

Specimens for pathologic study should be sent to Dr. Roger D. Baker, Duke Hospital, Durham, N. C. All other requests will be handled through the office of Dr. D. T. Smith, Duke Hospital, Durham, N. C.

CORRECTION

In the article by Captain Maurice Sullivan and Virginia J. Evans entitled "Nutritional Dermatoses in the Rat: X. A Comparison of Disseminated Neurodermatitis and Experimental Magnesium Deficiency (ARCH. DERMAT. & SYPH. **49**:33 [Jan.] 1944), attention is called to the following corrections: On page 40, heading III should read: "A Comparison of the Chemical Data for Human Subjects with Disseminated Neurodermatitis with Data for Experimental Magnesium Deficiency in Rats." On page 42, in the third line of the second column, the sentence should read: "In tabular form in section III are summarized important chemical characteristics of the human and of the experimental disease."

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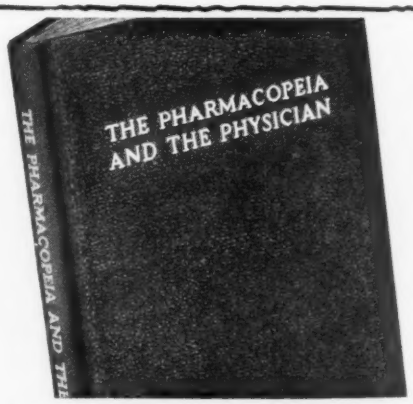

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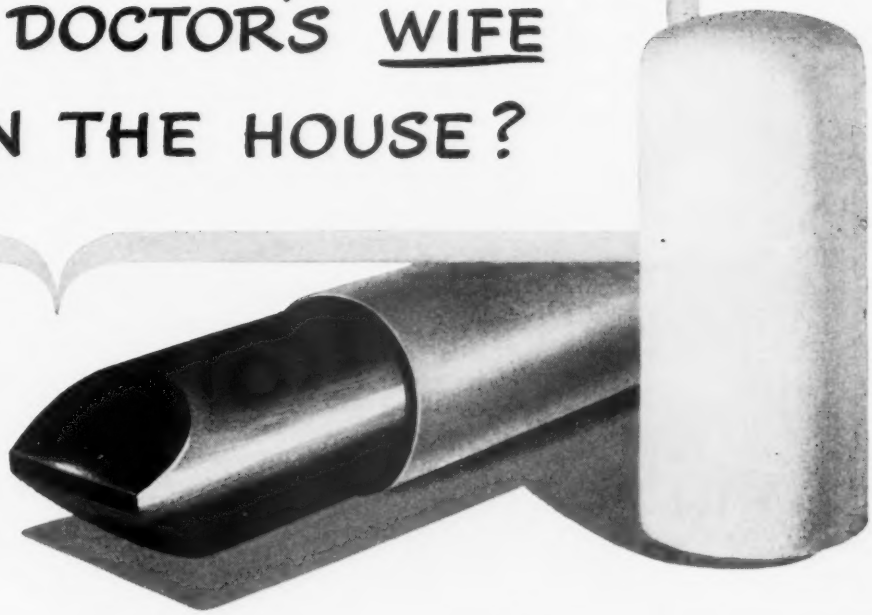

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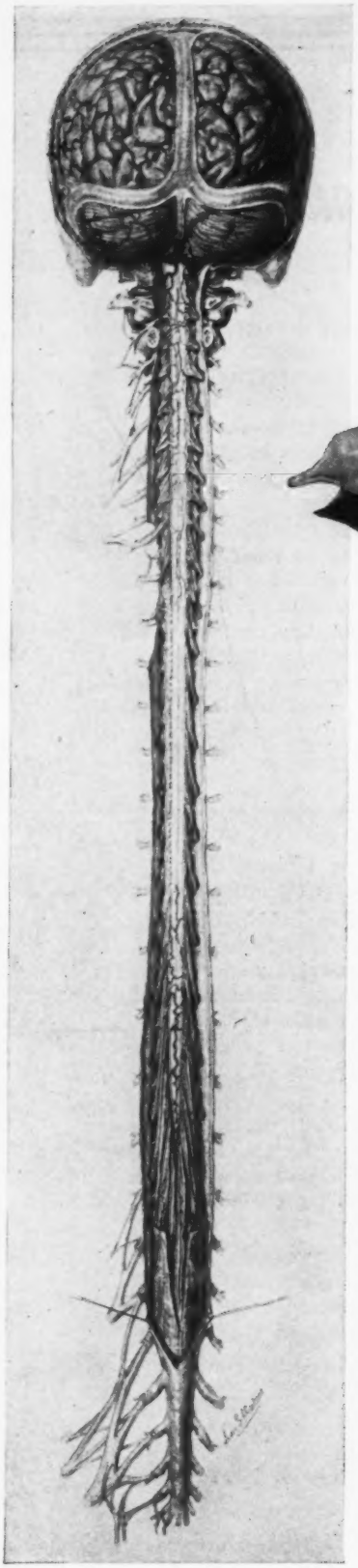

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